SONY

Digital Still Camera

Operating Instructions

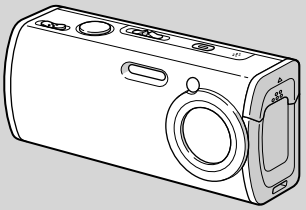
Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. DSC-L1

Serial No. _____



Cyber-shot

MEMORY STICK ™

InfoLITHIUM ™ T TYPE

DSC-L1

© 2004 Sony Corporation

2-186-445-**11** (1)

Getting started

Shooting still images

Viewing still images

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Advanced still image viewing

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Enjoying movies

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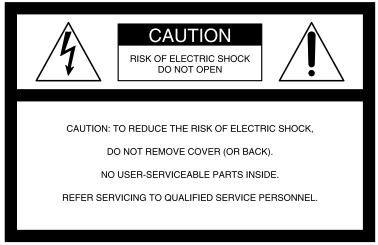
Additional information

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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For the Customers in the U.S.A.





This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

If you have any questions about this product, you may call:

Sony Customer Information Services Center
1-800-222-SONY (7669)

The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity

Trade Name:	SONY
Model No.:	DSC-L1
Responsible Party:	Sony Electronics Inc.
Address:	16450 W. Bernardo Dr, San Diego, CA 92127 U.S.A.
Telephone No.:	858-942-2230

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the Customers in the U.S.A. and Canada

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable.
You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.



For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit http://www.rbrc.org/

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

For the customers in the United Kingdom

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.
Should the fuse in the plug supplied need to be replaced, a fuse of the same rating as the supplied one and approved by ASTA or BSI to BS 1362, (i.e., marked with ⓐ or ♡ mark) must be used.
If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

Attention for the Customers in Europe

This product has been tested and found compliant with the limits sets out in the EMC Directive for using connection cables shorter than 3 meters (9.8 feet).

Attention

The electromagnetic field at the specific frequencies may influence the picture and sound of this camera.

Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the USB cable again.

“Memory Stick”

CE N50

For the Customers in the U.S.A. and Canada

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

Notice

Certain countries and regions may regulate disposal of the battery used to power this product. Please consult with your local authority.

Read this first

Trial recording

Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording

Contents of the recording cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or recording media, etc.

Back up recommendation

To avoid the potential risk of data loss, always copy (back up) data to a disk.

Notes on image data compatibility

- This camera conforms with the Design rule for Camera File system universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association).
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Do not shake or strike the camera

In addition to malfunctions and inability to record images, this may render the “Memory Stick Duo” unusable or image data breakdown, damage or loss may occur.

LCD screen, LCD finder (only models with an LCD finder) and lens

- The LCD screen and the LCD finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the LCD finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions.
- Do not press the LCD screen hardly. The screen may be uneven and that may cause a malfunction.
- Images may be trailed on the LCD screen in a cold location. This is not a malfunction.

The power zoom lens

This camera is equipped with a power zoom lens. Be careful not to bump the lens, and be careful not to apply force to it.

Lens cover

The lens cover of this camera opens and closes automatically when the camera is turned on and off. Be careful not to pinch your finger when the lens cover opens and closes. Also, do not attempt to forcibly open the lens cover, as this may cause malfunction.

Clean the flash surface before use

The heat of flash emission may cause dirt on the flash surface to become discolored or to stick to the flash surface, resulting in insufficient light emission.

Do not get the camera wet

When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. Water entering the inside of the camera may cause malfunctions which in some cases may not be repairable. If moisture condensation occurs, see page 116 and follow the instructions on how to remove it before using the camera.

Do not expose the camera to sand or dust

Using the camera in sandy or dusty locations may cause malfunction.

Do not aim the camera at the sun or other bright light

This may cause irrecoverable damage to your eyes. Or it may cause the malfunction of your camera.

Notes on the camera locations

Do not use the camera near a location that generates strong radio waves or emits radiation, or a location with a strong magnetic field. The camera may not be able to record or play back properly.

Carl Zeiss lens

This camera is equipped with a Carl Zeiss lens which is capable of reproducing sharp images with excellent contrast.
The lens for this camera has been produced under a quality assurance system certified by Carl Zeiss in accordance with the quality standards of Carl Zeiss in Germany.

The pictures used in this manual

The photographs used as examples of pictures in this manual are reproduced images, and are not actual images shot using this camera.

“Memory Stick” compatible with this camera

The IC recording medium used with this camera is the “Memory Stick Duo”. There are two sizes of “Memory Stick”. Choose the “Memory Stick” size that matches your camera.

“Memory Stick Duo” (Size used with this camera)



“Memory Stick”

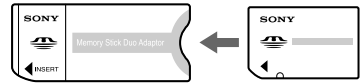


- For details on the “Memory Stick Duo”, see page 116.
- “Memory Stick PRO” and “Memory Stick PRO Duo” can be used only with “Memory Stick PRO” compatible equipment.
- For the number of images that can be saved using this camera, see page 25 or 108.

When using a “Memory Stick Duo” with “Memory Stick” compatible equipment

Be sure to insert the “Memory Stick Duo” into the supplied Memory Stick Duo Adaptor.

Memory Stick Duo Adaptor



On “InfoLITHIUM” battery pack

When using the battery pack for the first time

Be sure to charge the supplied NP-FT1 battery pack (page 13).

Recharging

The battery pack can be charged even when it has not been completely discharged. In addition, the battery pack can be used even if it has only been charged partway.

Extending the battery pack life

When not using the camera for a long time, turn off the camera, remove the battery pack and store it in a dry, cool place to maintain the battery pack functions (page 118).

- For details on “InfoLITHIUM” battery pack, see page 118.

Trademarks

- Cyber-shot is a trademark of Sony Corporation.
- "Memory Stick",  , "Memory Stick PRO", MEMORY STICK PRO, "Memory Stick Duo", MEMORY STICK DUO, "Memory Stick PRO Duo", MEMORY STICK PRO DUO, "MagicGate" and MAGICGATE are trademarks of Sony Corporation.
- "InfoLITHIUM" is a trademark of Sony Corporation.
- Picture Package is a trademark of Sony Corporation.
- Microsoft, Windows, WindowsMedia, and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Macintosh, Mac OS, QuickTime, iMac, iBook, PowerBook, Power Mac and eMac are trademarks or registered trademarks of Apple Computer, Inc.
- Macromedia and Flash are trademarks or registered trademarks of Macromedia, Inc. in the United States and/or other countries.
- Intel, MMX, and Pentium are trademarks or registered trademarks of Intel Corporation.
- In addition, system and product names used in this manual are, in general, trademarks or registered trademarks of their respective developers or manufacturers. However, the ™ or ® marks are not used in all cases in this manual.

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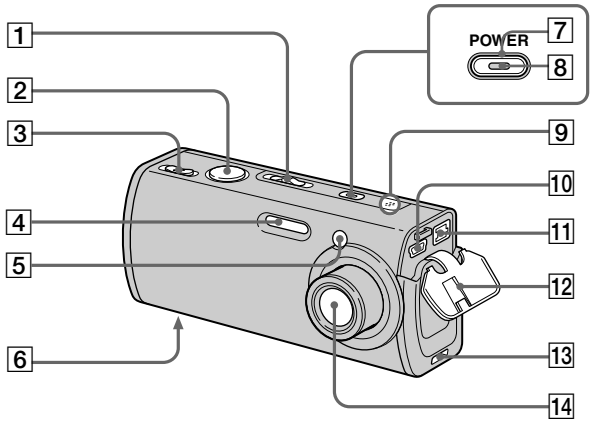
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Identifying the parts

See the pages in parentheses for details of operation.



1 **Mode switch** (18, 109)
: To shoot movies
: To shoot still images
: To view or edit images

2 **Shutter button** (26)

3 **For shooting: Zoom (W/T) lever** (30)
For viewing: / (Playback zoom) lever (61)**/ (Index) lever** (41)

4 **Flash** (32)

5 **Self-timer lamp** (31)**/ AF illuminator** (33, 112)

6 **Screw groove** (12)

7 **POWER button** (17)

8 **POWER lamp** (17)

9 **Microphone** (75)

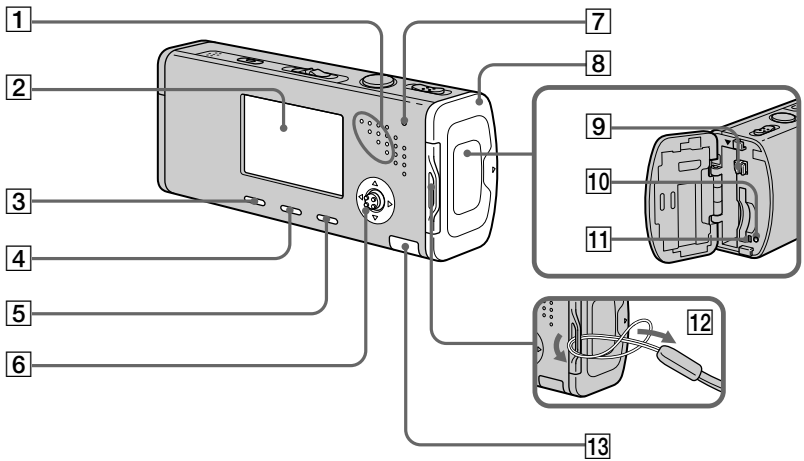
10 **(USB) jack** (69, 82)

11 **DC IN jack** (13, 16)

12 **Jack cover** (13, 16)

13 **Tripod adaptor attachment groove** (12)

14 **Lens**



1 **Speaker**

2 **LCD screen**
For details on the items on the LCD screen, see page 121 to 124.

3 **/ (Image Size/Delete) button** (22, 42)

4 **(Display/LCD backlight on/off) button** (29)

5 **MENU button** (46, 109)

6 **Control button**
Menu on: ▲/▼/◀/▶/● (17)/
Menu off: /// (32/31/29/55)

7 **/CHG lamp (orange)** (14)

8 **Battery/"Memory Stick Duo" cover**

9 **Battery eject lever** (13)

10 **RESET button** (95)

11 **Access lamp** (21)

12 **Hook for neck strap**
Attaching the strap
Attaching the strap is recommended to prevent dropping the camera.

13 **Internal battery cover**

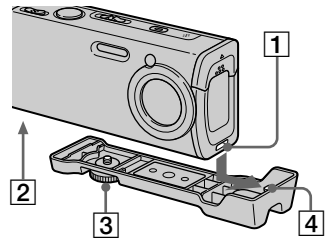
- This contains a rechargeable button battery. Do not open this cover, as this may cause a malfunction.

Securing the camera to a tripod lets you shoot clear pictures with little or no shaking. When attaching a tripod to the camera, first attach the tripod adaptor.

- **You cannot attach the tripod directly to the camera.**

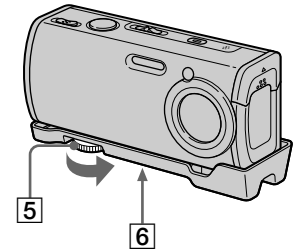
Attach the tripod adaptor

1 Insert the protrusion on the tripod adaptor with the tripod adapor attachment groove on the camera.



1 Tripod adaptor attachment groove
2 Screw groove
3 Locking screw
4 Protrusion

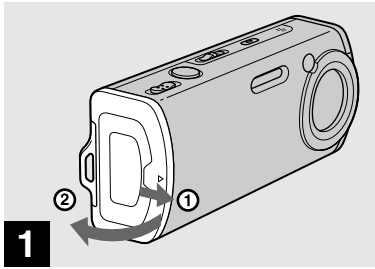
2 Make sure to match the locking screw with the screw groove on the camera, and then turn the locking screw to secure the tripod adaptor to the camera.



5 Locking screw
6 Tripod screw hole
Attach the tripod here.

- See the operating instructions supplied with the tripod for the method of attaching the tripod.
- Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the tripod adaptor to tripods having longer screws, and may damage the camera.
- Be careful so that the tip of the locking screw does not scratch the camera.

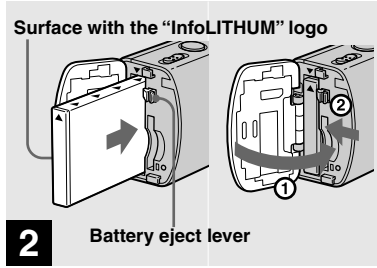
Charging the battery pack



➡ Open the battery/“Memory Stick Duo” cover.

Slide the cover in the direction of the arrow.

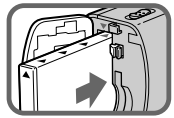
- **Be sure to turn off your camera when charging the battery pack (page 17).**
- Your camera operates with the “InfoLITHIUM” NP-FT1 battery pack (T type) (supplied). You can use only T type battery pack (page 118).



➡ Install the battery pack, then close the battery/“Memory Stick Duo” cover.

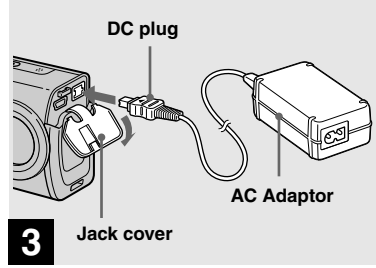
Make sure the battery pack is firmly inserted all the way, then close the cover.

Battery insertion slot



Insert the battery pack so that tip of the ▲ marks on the side of the battery pack face the tip of the ▲ mark on the battery insertion slot.

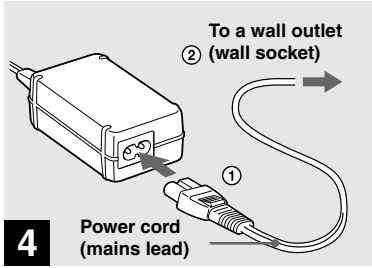
- The battery pack is easily inserted by pushing the battery eject lever toward the front of the camera using the tip of the battery pack.



➡ Connect the AC Adaptor (supplied) to the DC IN jack of your camera.

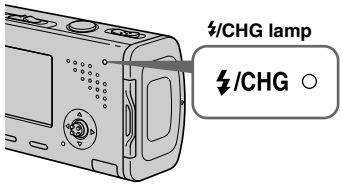
Connect the DC plug with the ▲ mark facing up.

- Do not short the DC plug of the AC Adaptor with a metallic object, as this may cause malfunction.
- Clean the DC plug of the AC Adaptor with a dry cotton bud. Do not use the dirty plug. Use of the dirty plug may not properly charge the battery pack.



➡ **Connect the power cord (mains lead) to the AC Adaptor and to a wall outlet (wall socket).**

The ϟ/CHG lamp lights up when charging begins.

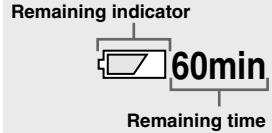


The ϟ/CHG lamp goes off when charging is completed.

- After charging the battery pack, disconnect the AC Adaptor both from the DC IN jack of the camera and from a wall outlet (wall socket).

Battery remaining indicator

The battery remaining indicator on the LCD screen shows the remaining shooting or viewing time.



- The displayed time remaining may not be correct under certain circumstances or conditions.

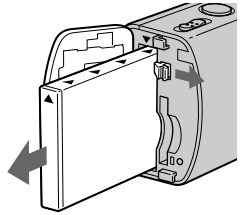
Charging time

Approximate time to charge a completely discharged battery pack using the AC Adaptor at a temperature of 25°C (77°F).

Battery pack	Charging time (min.)
NP-FT1 (supplied)	Approx. 150

- The charging time may become longer under certain circumstances or conditions.

To remove the battery pack



Open the battery/“Memory Stick Duo” cover. Slide the battery eject lever in the direction of the arrow, and remove the battery pack.

- Be careful not to drop the battery pack when removing it.

Number of images and battery life that can be recorded/ viewed

The tables show the approximate number of images and the battery life that can be recorded/viewed when you shoot images in normal mode with a fully charged battery pack (supplied) at a temperature of 25°C (77°F). The numbers of images that can be recorded or viewed take into account changing the “Memory Stick Duo” as necessary. Note that the actual numbers may be less than indicated depending on the conditions of use.

- The battery capacity decreases as the number of uses increases and over time (page 119).

Shooting still images

Under the average conditions[1)]

Image size	NP-FT1 (supplied)		
	LCD backlight	No. of images	Battery life (min.)
4M	On	Approx. 240	Approx. 120
	Off	Approx. 280	Approx. 140
VGA (E-Mail)	On	Approx. 240	Approx. 120
	Off	Approx. 280	Approx. 140

[1)] Shooting in the following situations:
- – (P.Quality) is set to [Fine]
- – Shooting one time every 30 seconds
- – The zoom is switched alternately between the W and T ends
- – The flash strobes once every two times
- – The power turns on and off once every ten times
- – [AF Mode] is set to [Single] on the Setup screen

The measurement method is based on CIPA standard. (CIPA: Camera & Imaging Products Association)

Viewing still images[2)]

Image size	NP-FT1 (supplied)	
	No. of images	Battery life (min.)
4M	Approx. 5200	Approx. 260
VGA (E-Mail)	Approx. 5200	Approx. 260

[2)] Viewing single images in order at about three second intervals

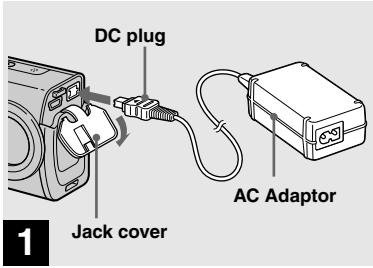
Shooting movies[3)]

NP-FT1 (supplied)	
LCD backlight On	LCD backlight Off
Approx. 100 min.	Approx. 120 min.

[3)] Shooting movies continuously with the image size [160]

- The number of images and the battery life that can be recorded/viewed are decreased under the following conditions:
  - – The surrounding temperature is low
  - – The flash is used
  - – The camera has been turned on and off many times
  - – The zoom is used frequently
  - – [LCD Backlight] is set to [Bright] on the Setup screen
  - – [AF Mode] is set to [Monitor] on the Setup screen
  - – The battery power is low

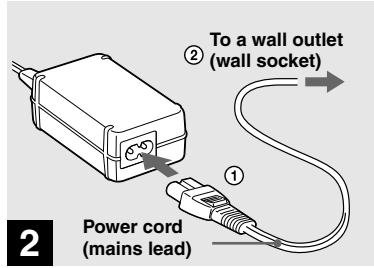
Using the AC adaptor



➡ **Open the jack cover and connect the AC Adaptor (supplied) to the DC IN jack of your camera.**

Connect the DC plug with the ▲ mark facing up.

- Connect the AC Adaptor to an easily accessible wall outlet (wall socket) close by. If any trouble occurs while using the adaptor, immediately shut off the power by disconnecting the plug from the wall outlet (wall socket).



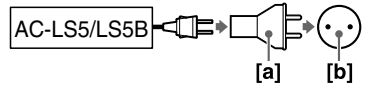
➡ **Connect the power cord (mains lead) to the AC Adaptor and then to a wall outlet (wall socket).**

- After using the AC Adaptor, disconnect it both from the DC IN jack of the camera and from a wall outlet (wall socket).
- The set is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet (wall socket) even if the set itself has been turned off.

Using your camera abroad

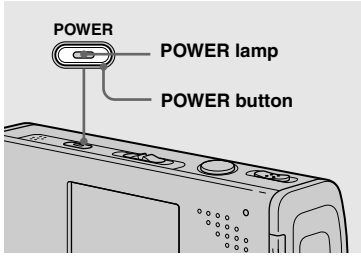
Power sources

You can use your camera in any country or region with the AC Adaptor/power cord (mains lead) (supplied) within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (wall socket) **[b]**.



- Do not use an electronic transformer (travel converter), as this may cause a malfunction.

Turning on/off your camera



➡ **Press POWER.**

The POWER lamp (green) lights up and the power is on. When you turn on your camera for the first time, the Clock Set screen appears (page 18).

Turning off the power

Press POWER again. The POWER lamp goes out, and the camera turns off.

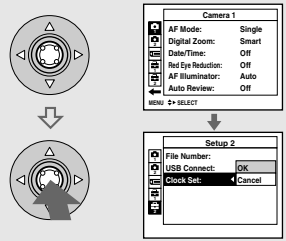
- **Do not leave the camera with the lens portion extended for a long period of time with the battery pack or the AC Adaptor removed, as this may cause malfunction.**
- If you turn on the power when the mode switch is set to 📷 or 🎞, the lens portion moves. Do not touch the lens portion while it is operating.

Auto power-off function

If you do not operate the camera for about three minutes during shooting or viewing or when performing Setup, the camera turns off automatically to prevent wearing down the battery. The auto power-off function only operates when the camera is operating using a battery pack. The auto power-off function also will not operate in the following circumstances.

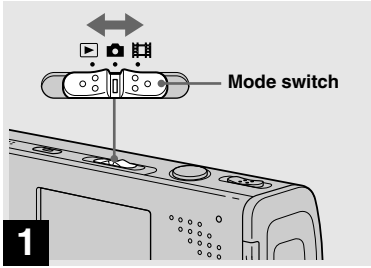
- When viewing movies
- When playing back a slide show
- When connecting USB cable

How to use the control button



To change the current settings of the camera, bring up the menu or the Setup screen (page 47), and use the control button to make the changes.
To set a menu item, press ▲/▼/◀/▶ on the control button to select the desired item and setting and make the setting. To set a Setup item, press ▲/▼/◀/▶ on the control button to select the desired item and setting, then press ● to make the setting.

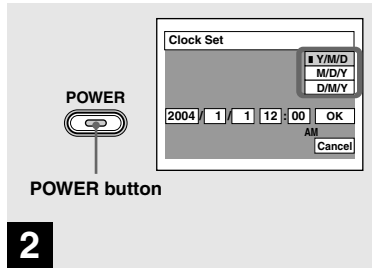
Setting the date and time



➡ **Set the mode switch to .**

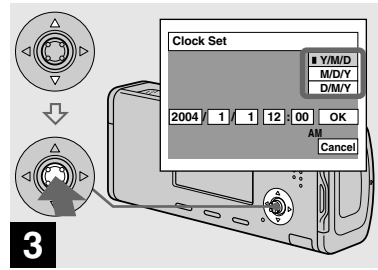
• To change the date and time on the Setup screen, select [Clock Set] in (Setup 2) (pages 47 and 114), and perform the procedure from step 3.

• You can also carry out this operation when the mode switch is set to or .



➡ **Press POWER to turn on the power.**

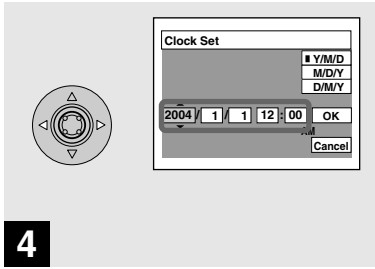
The POWER lamp (green) lights up and the Clock Set screen appears on the LCD screen.



➡ **Select the desired date display format with ▲/▼ on the control button, then press ●.**

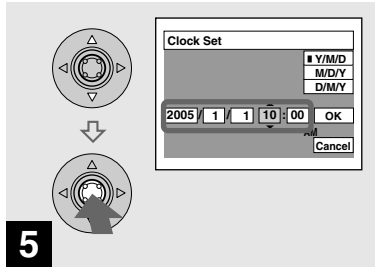
Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year) or [D/M/Y] (day/month/year).

• If the rechargeable button battery (page 116), which provides the power for saving the time data, ever becomes low, the Clock Set screen will appear again. When this happens, reset the date and time, by starting from step 3 above.



➡ **Select the year, month, day, hour or minute item you want to set with ◀/▶ on the control button.**

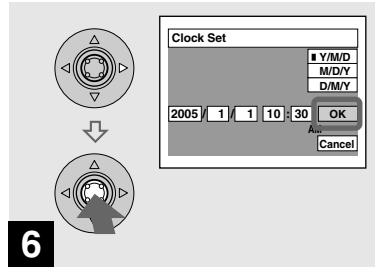
The item to be set is indicated with ▲/▼.



➡ **Set the numeric value with ▲/▼ on the control button, then press ● to enter it.**

After entering the number, ▲/▼ moves to the next item. Repeat steps **4** and **5** until all of the items are set.

- If you selected [D/M/Y] in step **3**, set the time on a 24-hour cycle.
- Midnight is indicated as 12:00 AM, and noon as 12:00 PM.



➡ **Select [OK] with ▶ on the control button, then press ●.**

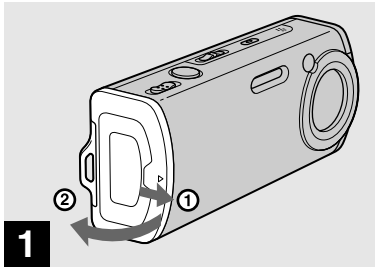
The date and time are entered and the clock starts to keep time.

- To cancel the date and time setting, select [Cancel] with ▲/▼/◀/▶ on the control button, then press ●.

Changing the language setting

You can change the screen display like menu items, warnings and messages in your desired language.
To change the language setting, select (Language) in (Setup 1) on the Setup screen, (pages 47 and 113) and select the desired language.

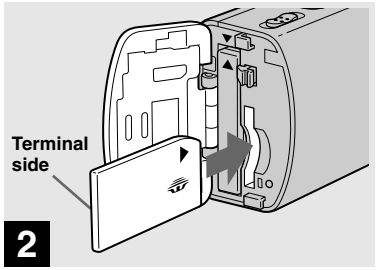
Inserting and removing a “Memory Stick Duo”



➡ Open the battery/“Memory Stick Duo” cover.

Slide the cover in the direction of the arrow.

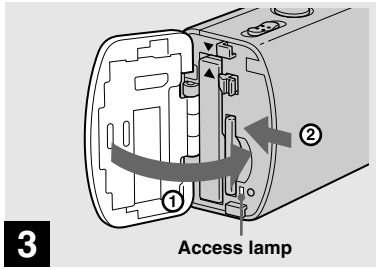
- **When using this camera, the Memory Stick Duo Adaptor (supplied) is not necessary.**
- For details on “Memory Stick Duo”, see page 116.



➡ Insert the “Memory Stick Duo”.

Insert a “Memory Stick Duo” all the way in until it clicks as illustrated.

- When inserting a “Memory Stick Duo”, make sure of the direction and insert it all the way to the connector. If the “Memory Stick Duo” is not inserted correctly, you may not be able to record or display images with the “Memory Stick Duo”. And also it may result in malfunction of both the camera and “Memory Stick Duo”.



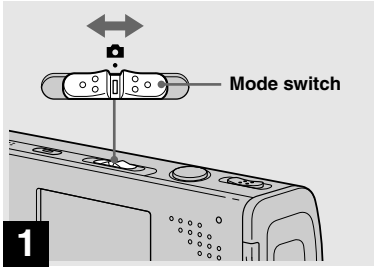
➡ Close the battery/“Memory Stick Duo” cover.

To remove a “Memory Stick Duo”

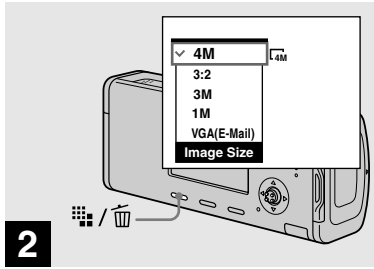
Open the battery/“Memory Stick Duo” cover, then push the “Memory Stick Duo” to pop it out.

- **Whenever the access lamp is lit, the camera is recording or reading an image. Never remove the “Memory Stick Duo” or turn off the power at this time. The data may be corrupted.**

Setting the still image size



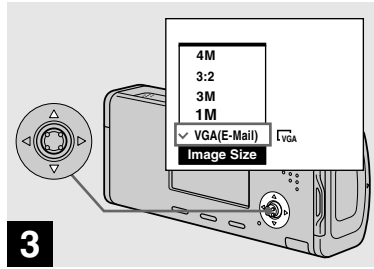
➡ **Set the mode switch to 📷, and turn on the power.**



➡ **Press ▦ / 🗑 (Image Size).**

The Image Size setup appears.

- For details on the image size, see page 23.



➡ **Select the desired image size with ▲/▼ on the control button.**

The image size is set.
When the setting is complete, press ▦ / 🗑 (Image Size) so that the Image Size setup disappears from the LCD screen.

- The image size selected here is maintained even when the power is turned off.

Image size and quality

You can choose image size (number of pixels) and image quality (compression ratio) based on the kind of images you want to shoot.
The image size is shown by the number of pixels (dots) (horizontal × vertical), which compose an image. For example, a 4M (2304×1728) size image indicates that there are 2304 pixels horizontally and 1728 pixels vertically. The larger the number of pixels, the larger the image size.
You can select from Fine (high quality) or Standard image quality. Each uses a different compression ratio.
When you select Fine, the image quality improves as the image size increases, but the amount of recorded data also increases and the number of images that can be recorded on a "Memory Stick Duo" decreases. Refer to the table on the right and choose the image size and image quality appropriate to the kind of images you want to shoot.

Short description of the image size

The following illustration shows a brief image using the maximum image size and the minimum one.

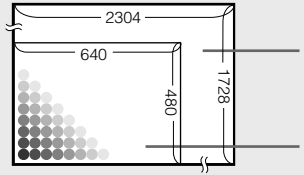


Image size
4M 4M
2304 pixels × 1728 pixels = 3,981,312 pixels

Image size
VGA (E-Mail) VGA
640 pixels × 480 pixels = 307,200 pixels

Examples based on the image size

Image size		Usage guidelines
4M[1] (2304×1728)	Larger	• For saving important images, printing in A4 size or printing A5 size high density images
3:2[2] (2304×1536)		
3M (2048×1536)		
1M (1280×960)		• For printing in postcard size
VGA (E-Mail) (640×480)	Smaller	• For recording a larger number of images • For attaching images to e-mail or creating home pages

[1] The factory setting is [4M]. It is the highest image quality on this camera.
[2] Images are recorded in the same 3:2 aspect ratio as photograph printing paper or postcards, etc.

Examples based on the image quality

Image quality (Compression ratio)		Usage guideline
Fine	Low compression (looks better) ↕ High compression (normal)	• For recording or printing with better image quality.
Standard		• For recording a larger number of images.

Number of still images that can be recorded

The number of images that can be saved in a “Memory Stick Duo”[1)]

The number of images that can be saved when [P.Quality] is set to [Fine] ([Standard])[2)] are shown below.

- The table below shows the approximate number of images that can be recorded on a “Memory Stick Duo” that has been formatted by this camera.

(Units: number of images)

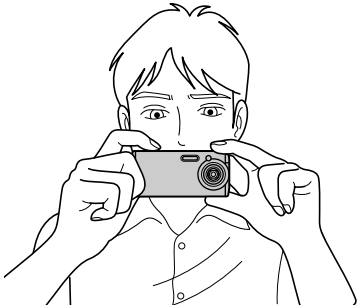
Capacity / Image size	16MB	32MB	64MB	128MB	256MB	512MB
4M	8 (14)	16 (30)	32 (60)	65 (121)	119 (216)	242 (440)
3:2	8 (14)	16 (30)	32 (60)	65 (121)	119 (216)	242 (440)
3M	10 (18)	20 (37)	41 (74)	82 (149)	148 (264)	302 (537)
1M	24 (46)	50 (93)	101 (187)	202 (376)	357 (649)	726 (1320)
VGA (E-Mail)	97 (243)	196 (491)	394 (985)	790 (1975)	1428 (3571)	2904 (7261)

[1)] When [REC Mode] is set to [Normal].
For the number of images that can be saved in other modes, see page 108.
[2)] For more information about the image quality (compression ratio), see page 47.

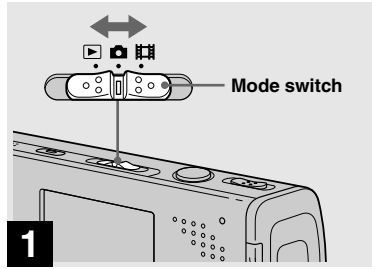
- When images recorded using earlier Sony models are played back on this camera, the display may differ from the actual image size.
- When the images are viewed on the LCD screen of the camera, they all look the same size.
- The number of shooting images may differ from these values according to the shooting mode, shooting conditions and the subject.
- When the number of remaining shooting images is greater than 9,999, the “>9999” indicator appears on the LCD screen.
- You can resize the images later (Resize function, see page 66).

Basic still image shooting — Using auto adjustment mode

Holding the camera correctly

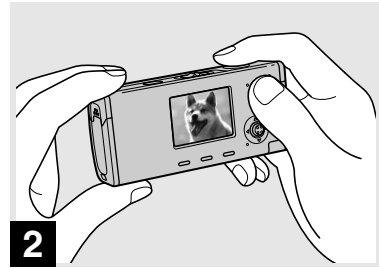


When shooting pictures with the camera, be careful so that your fingers do not block the lens portion, flash emitter, microphone or ϟ/CHG lamp. (page 10)



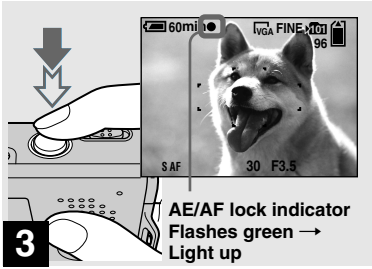
➡ Set the mode switch to 📷, and turn on the power.

- The lens cover opens when the power is turned on while the mode switch is set to 📷 or 🎞.
- Do not touch the lens portion while it is operating, such as when you press POWER to turn on the power or when the zoom function is working (page 30).



➡ Hold the camera steadily with both hands and position the subject in the center of the focus frame.

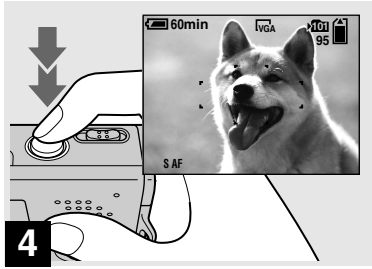
- This camera has an Auto Macro AF function. The minimum focal distance needed to focus on a subject is approx. 12 cm (4 3/4 inches) from the lens surface at the W end or 50 cm (19 3/4 inches) at the T end.
- The frame indicated on the LCD screen shows the focus adjustment range (AF range finder, page 50).



➡ **Press and hold the shutter button halfway down.**

The beep sounds but the image is not yet recorded. When the AE/AF lock indicator changes from flashing to steadily lit, the camera is ready for shooting.
(The LCD screen may be frozen for a split second depending on the subject.)

- If you release the shutter button, shooting will be canceled.
- You can continue and shoot even when the camera does not beep, but in this case the focus is not set properly.
- No beep sounds when [Beep] is set to [Off] on the Setup screen (page 113).



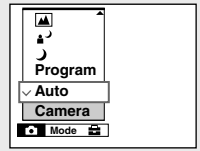
➡ **Press the shutter button fully down.**

The shutter sounds. The image will be recorded in the "Memory Stick Duo". The recorded image is displayed for approximately two seconds (Auto Review, page 112).

- When operating the camera using a battery pack, if you do not operate the camera for a while during recording or playback, the camera turns off automatically to prevent wearing down the battery (page 17).

Mode switch

When you set the mode switch to , the functions that can be used change as follows according to (Camera) in the menu.



Still image auto shooting [Auto]

The focus, exposure and white balance are automatically adjusted as needed to allow easy shooting. In addition, the image quality is set to [Fine] (page 47), the AF range finder frame is set to [Multi AF], and the metering mode is set to [Multi] (pages 50 and 55).
Only (Camera), [Mode] (REC Mode) and (Setup) appear in the menu.

Still image program shooting [Program]

The necessary adjustments are made automatically like still image auto shooting, but you can also change the focus and other adjustments as desired. In addition, you can also set the desired shooting functions using menus (pages 46 and 109).

(Twilight mode) (page 36)
(Twilight portrait mode) (page 36)
(Landscape mode) (page 36)
(Soft snap mode) (page 36)
(Snow mode) (page 36)
(Beach mode) (page 37)
(Candle mode) (page 37)

To switch the shooting method

1 Set the mode switch to .
2 Press MENU.
3 Select (Camera) with ◀ on the control button.
4 Select the desired shooting mode with ▲/▼ on the control button.

Auto Focus

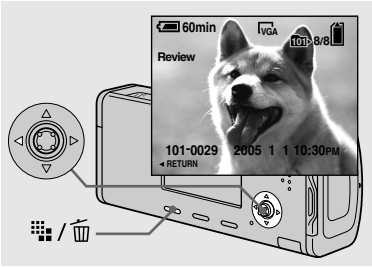
When you try to shoot a subject that is difficult to focus on, the AE/AF lock indicator changes to flashing slowly. In addition, the AE locked beep does not sound.

The Auto Focus function may have difficulty working under the following conditions. In such cases, release the shutter button, then recompose the shot and focus again.

- The subject is distant from the camera and dark.
- The contrast between the subject and its background is poor.
- The subject is seen through glass, such as a window.
- A fast-moving subject.
- The subject reflects or has a lustrous finish, such as a mirror or a luminous body.
- A flashing subject.
- A backlit subject.

There are two Auto Focus functions: “AF range finder frame” which sets the focus position according to the subject position and size, and “AF mode” which sets the focus start/finish timing. See page 50 for details.

Checking the last image you shot — Quick Review



➡ **Press ◀ (⊜) on the control button.**

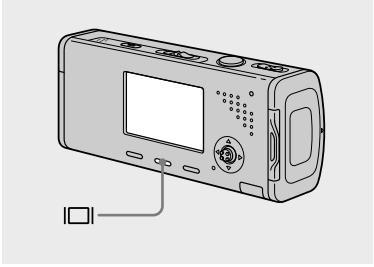
To return to the normal shooting mode, press lightly on the shutter button or press ◀ (⊜) again.

To delete the image displayed on the LCD screen

1 Press / (Delete).
2 Select [Delete] with ▲ on the control button, then press ●.
The image is deleted.

- The image may appear rough right after playback starts due to the image processing.

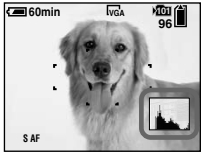
Indicators on the LCD screen during shooting



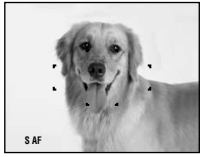
Each time you press , the display changes in the following order.

- For a detailed description of the indicators, see page 121.
- For a detailed description of the histogram, see page 53.
- You can extend the battery remaining time by turning off the LCD backlight.
- When shooting/viewing movies, the status of the LCD screen changes as follows: Indicators off → LCD backlight off → Indicators on
- This setting is maintained even when the power is turned off.

Histogram on (Image information can also be displayed during playback.)

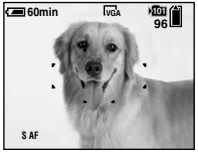


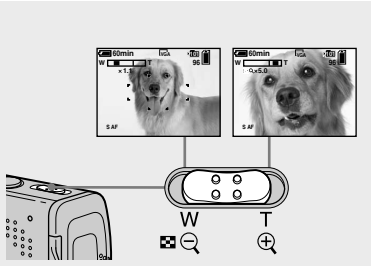
Indicators off



LCD backlight off

Indicators on





➡ **Slide the zoom lever to choose the desired zoom position for shooting.**

The minimum focal distance to the subject

Approx. 12 cm (4 3/4 inches) from the lens tip at the W side
Approx. 50 cm (19 3/4 inches) from the lens tip at the T side

- The lens portion moves during zoom operation. Do not touch the lens portion while it is operating.
- You cannot change the zoom scale while shooting movie (page 75).

Zoom

Your camera is equipped with the following zoom functions.
The enlargement method and the zoom scale differ according to the image size and the zoom type, so select the zoom to match the shooting purpose.

Optical zoom

The telephoto and wide angle adjustment is made by the lens in the same manner as a conventional film camera.
The maximum optical zoom is 3×.

Digital zoom

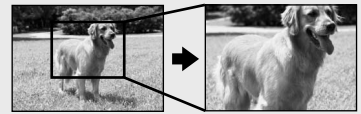
The camera has the following two types of digital zoom.

Smart zoom

The image is enlarged with almost no distortion. This lets you use smart zoom with the same feeling as optical zoom.
The maximum smart zoom scale depends on the selected image size as shown in the following table.

Precision digital zoom

All image sizes are enlarged up to a maximum 6×. Precision digital zoom function cuts out and enlarges a certain portion of the image, so the image quality deteriorates.



Optical zoom **Precision digital zoom**

Image size	Maximum smart zoom scale	Maximum precision digital zoom scale
4M	—*	approx. 6×
3:2	—*	approx. 6×
3M	approx. 3.4×	approx. 6×
1M	approx. 5.4×	approx. 6×
VGA (E-Mail)	approx. 10×	approx. 6×

* The maximum optical zoom scale is 3×.

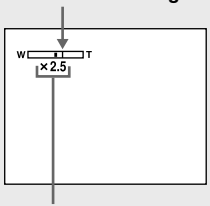
- The maximum smart zoom and precision digital zoom scale includes the optical zoom scale.
- When using the smart zoom, the image on the LCD screen may look rough. However, this phenomenon has no effect on the recorded image.
- You cannot use the smart zoom in the Multi Burst mode.

To set digital zoom

Set [Digital Zoom] to [Smart] or [Precision] on the Setup screen (page 112). When you purchase your camera, [Digital Zoom] is set to [Smart].

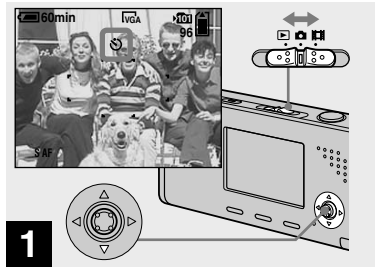
When you slide the zoom lever, the zoom scaling indicator appears on the LCD screen as follows.

The W side of this line is optical zoom, and the T side is digital zoom



Zoom scaling indicator

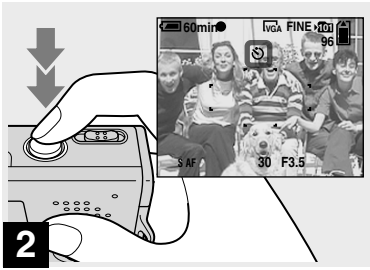
- The zoom scaling indicator differs according to the zoom type.
  - Optical zoom: ×
  - Smart zoom: S×
  - Precision digital zoom: P×
- The AF range finder frame does not appear when using the digital zoom. The [ ] or [ ] indicators flashes, and AF operates with priority on subjects located near the center.



➡ Set the mode switch to 📷, and press ▼ (⏲) on the control button.

The ⏲ (self-timer) indicator appears enlarged on the LCD screen (page 112).

- If the menu is currently displayed, press MENU first so that the menu disappears.
- You can also carry out this operation when the mode switch is set to 🎞.



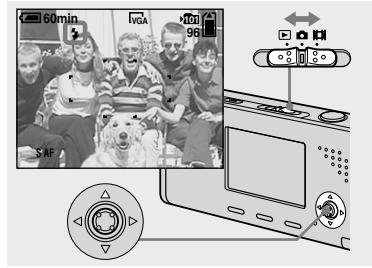
➡ **Center the subject in the frame. Press and hold the shutter button halfway down to focus on, then press the shutter button fully down.**

The self-timer lamp (page 10) flashes and a beep sounds after you press the shutter button until the shutter operates (approximately 10 seconds later).

To cancel the self-timer in the middle of the operation

Press ▼ (⏲) on the control button again. The ⏲ indicator disappears from the LCD screen.

- If you press the shutter button while standing in front of the camera, the focus and the exposure may not be correctly set.



➡ **Set the mode switch to 📷, and press ▲ (ϟ) on the control button repeatedly to select a flash mode.**

The selected flash mode indicator appears enlarged on the LCD screen (page 112). Each time you press ▲ (ϟ), the indicator changes as follows.

No indicator (Auto): The flash automatically strobes when shooting images in a dark place. The factory setting is Auto.
ϟ (Forced flash): The flash strobes regardless of the surrounding brightness.

ϟSL (Slow synchro): The flash strobes regardless of the surrounding brightness. The shutter speed is slow in a dark place, so you can clearly shoot the background that is out of flash light.
(No flash): The flash does not strobe.

- If the menu is currently displayed, press MENU first so that the menu disappears.
- The recommended shooting distance using the flash is approx. 0.2 to 2.0 m (7 7/8 to 78 3/4 inches) (W)/0.5 to 1.5 m (19 3/4 to 59 1/8 inches) (T) (When [ISO] is set to [Auto] in the menu settings).
- The flash strobes twice. The first time is the pre-flash which is used to adjust the flash light quantity, and the second time is the actual flash during which the image is recorded.
- You can change the brightness of the flash with ϟ± (Flash Level) in the menu settings (page 57). (You cannot change the brightness of the flash while 📷 (Camera) in the menu is set to [Auto] in the menu.)
- When using the ϟSL (Slow synchro) or (No flash) mode, the shutter speed becomes slower in dark places, so using a tripod is recommended.
- While charging the flash, the ϟ/CHG lamp flashes. After the charging is complete, the lamp goes out and flash mode is ready.
- Flash mode setting is maintained even when the power is turned off.

To prevent subjects' eyes from appearing red

The flash pre-strobes twice or more before shooting to reduce the red-eye phenomenon.
Set [Red Eye Reduction] to [On] on the Setup screen (page 112). The indicator appears on the LCD screen.

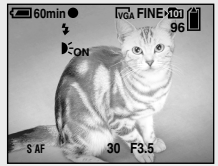


Red-eye reduction takes approximately one second before actually shooting the image, so hold the camera firmly to avoid shaking. In addition, be sure to tell the subject to hold still.

- Red-eye reduction may not produce the desired effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions. In addition, red-eye reduction is more effective under bright lighting and when closer to the subject.

Shooting images with the AF illuminator

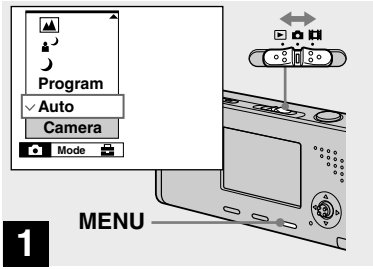
The AF illuminator is fill light to focus more easily on a subject in dark surroundings. The AF ON appears on the LCD screen and the AF illuminator emits red light when the shutter button is pressed halfway until the focus is locked.



When this function is not needed, set [AF Illuminator] to [Off] on the Setup screen (page 112).

- If AF illuminator light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. (A distance up to approximately 2.0 m (78 3/4 inches) (W)/1.5 m (59 1/8 inches) (T) is recommended.)
- Focus is achieved as long as AF illuminator light reaches the subject, even if the light is slightly off the center of the subject.
- The AF range finder frame does not appear. The or indicator flashes, and AF operates with priority on subjects located near the center.
- The AF illuminator operates only when (Camera) is set to [Auto], [Program], (Twilight portrait mode), (Soft snap mode), (Snow mode), (Beach mode) or (Candle mode) in the menu.
- The AF illuminator emits very bright light. Although there are no problems with safety, directly looking into the AF illuminator emitter at close range is not recommended.

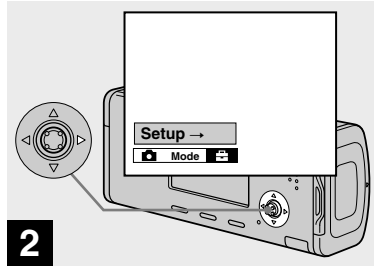
Inserting the date and time on a still image



➡ **Set the mode switch to 📷, then press MENU.**

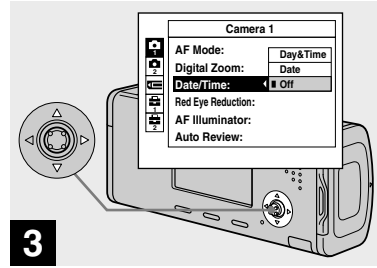
The menu appears.

- When images are shot with the date and time superimposed, the date and time cannot be removed later.
- The date and time are not inserted in Multi Burst mode.
- The date and time do not appear on the LCD screen during shooting, instead, DATE indicator appears on the LCD screen. The actual date and time appear in red on the lower-right corner during playback only.
- You can also carry out this operation with the mode switch set to 🎞 or ▶.

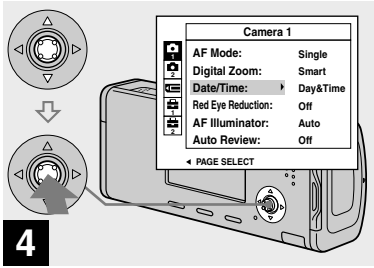


➡ **Press ▶ on the control button to advance to 🧰, then press ▶ again.**

The Setup screen appears.



➡ **Select 📷 (Camera 1) with ▲ on the control button, then press ▶.**
Select [Date/Time] with ▲/▼, then press ▶.



➡ **Select the date and time setting with ▲/▼ on the control button, then press ●.**

Day&Time: Superimposes the date, hour, and minute onto the image.
Date: Superimposes the year, month and day onto the image.
Off: Does not superimpose the date and time onto the image.

After the setting has been completed, press MENU first so that the menu disappears, and shoot the image.

- If you select [Date], the date is superimposed onto the image in the order selected in "Setting the date and time" (page 18).
- Date and time setting is maintained even when the power is turned off.

You can shoot more effectively by selecting the appropriate mode and then pressing the shutter button.

Twilight mode

Allows you to shoot night scenes at far distance without losing the dark atmosphere of the surroundings.



- The shutter speed becomes slower, so using a tripod is recommended.

Twilight portrait mode

Suitable for shooting portraits in dark places. Allows you to shoot sharp images of people in dark places without losing the dark atmosphere of the surroundings.



- The shutter speed becomes slower, so using a tripod is recommended.

Landscape mode

Focuses only on a distant subject to shoot landscapes, etc.



Soft snap mode

This mode lets you shoot skin colors in brighter and warmer tones for more beautiful pictures. In addition, the soft focus effect creates a gentle atmosphere for portraits of people, flowers, etc.



Snow mode

When shooting snowy scenes or other places where the whole screen appears white, use this mode to prevent sunken colors and record clear images.



Beach mode

When shooting seaside or lakeside scenes, the blue of the water is clearly recorded.

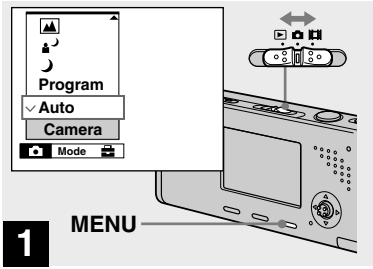


Candle mode

You can record parties, candle services and other candlelit scenes without spoiling the candlelight atmosphere.

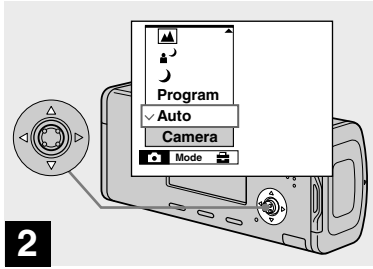


- The shutter speed becomes slower, so using a tripod is recommended.



➡ **Set the mode switch to 📷, then press MENU.**

The menu appears.



➡ **Select 📷 (Camera) with ◄ on the control button, then select the desired mode with ▲/▼.**

To return to normal mode

Select [Auto] or [Program] with ▲/▼ on the control button.

- Scene Selection setting is maintained even when the power is turned off.

Shooting with Scene Selection

When shooting with the Scene Selection function, the combination of functions such as the flash mode is predetermined to make the optimum settings to match the scene. See the table below for the function setting of each shooting mode.

Function / Shooting mode	Flash mode	AF range finder frame	White balance	Flash level	Burst/ Multi Burst
		○	○	—	—
	SL	○	Auto	○	—
	/	○	○	○	○
	○	○	○	○	○
	/	○	○	○	○
	/	○	○	○	○
		Center AF		—	—

• ○ indicates that the function can be set to your preference.

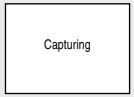
NR slow shutter

The NR slow shutter function reduces noise from recorded images, providing clear images. When the shutter speed is 1/6 second or slower, the camera automatically activates the NR slow shutter function and "NR" is indicated next to the shutter speed indicator.



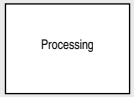
Press the shutter button fully down.

↓



Then the screen turns black.

↓



Finally, when "Processing" disappears, the image has been recorded.

• Do not move the camera while "Capturing" appears. To eliminate the effects of vibration, using a tripod is recommended.
• When a slow shutter speed is set by the camera, the processing may take some time.

Viewing images on the LCD screen of your camera

Single screen



Index screen



You can view images shot with your camera almost immediately on the LCD screen. You can select the following two methods for viewing images.

Single screen

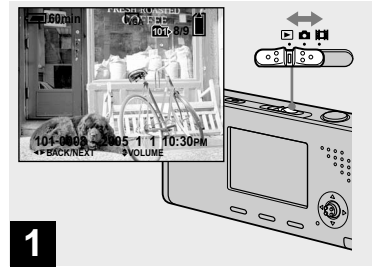
You can view one image at a time, displayed over the entire screen.

Index screen

Nine images are displayed simultaneously in separate panels on the LCD screen.

- For details on viewing movies, see page 76.
- For a detailed description of the indicators, see page 123.

Viewing single images

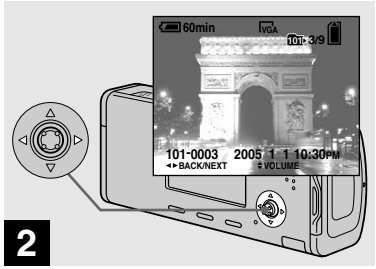


➡ Set the mode switch to ▶, and turn on the power.

The last image in the selected recording folder (page 60) appears on the LCD screen.

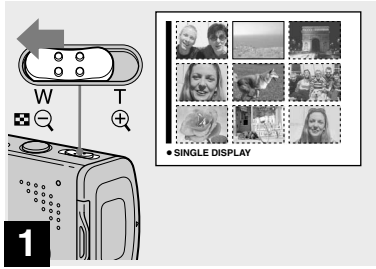
- The image may appear rough right after playback starts due to the image processing.

Viewing an index screen



➡ Select the desired still image with ◄/► on the control button.

◄ : To display the preceding image
► : To display the next image

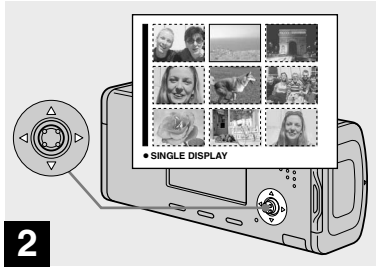


➡ Slide ▦ (index) to the W side.

The display switches to the **index screen**.

To display the next (previous) index screen

Press ▲/▼/◄/► on the control button to move the yellow frame up/down/left/right.



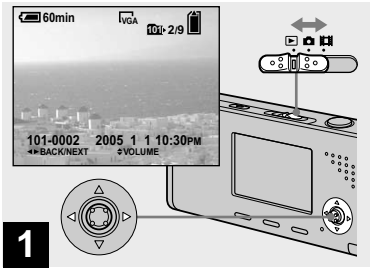
➡ Select the desired still image with ▲/▼/◄/► on the control button.

The image in the yellow frame is selected.

To return to the single-image screen

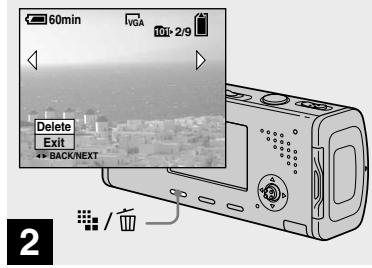
Slide the ▦ (index) to the T side or press ● on the control button.

Deleting images



➡ **Set the mode switch to ▶, and turn on the camera.**
Press ◀/▶ on the control button to select the image you want to delete.

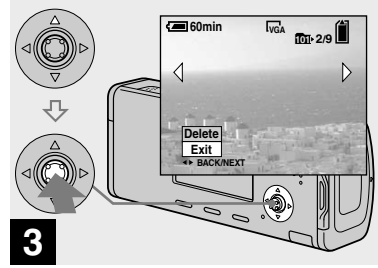
• Note that you cannot restore deleted images.



➡ **Press ▦ / 🗑 (Delete).**

The image has not yet been deleted at this point.

• You cannot delete the protected image (page 64).



➡ **Select [Delete] with ▲ on the control button, then press ●.**

The message “Access” appears, and the image has been deleted.

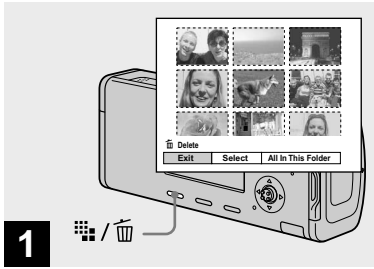
To continue and delete other images

Display the image to be deleted with ◀/▶ on the control button. Then, select [Delete] with ▲ and press ●.

To cancel deleting

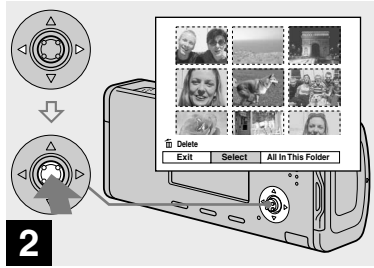
Select [Exit] with ▼ on the control button, then press ●.

Deleting images in index mode

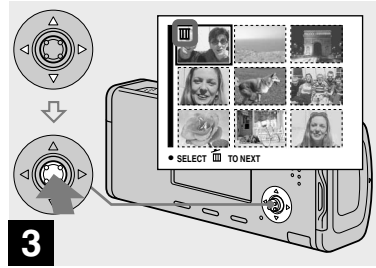


➡ **While an index screen (page 41) is displayed, press / (Delete).**

• Note that you cannot restore deleted images.



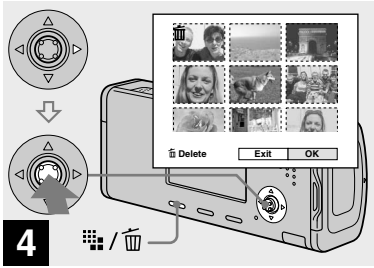
➡ **Select [Select] with ◀/▶ on the control button, then press ●.**



➡ **Select an image you want to delete with ▲/▼/◀/▶ on the control button, then press ●.**

The (Delete) indicator appears on the selected image. At this point, the image has not yet been deleted. Repeat this step for all of the images you want to delete.

• To cancel a selection, select the image, then press ● on the control button again so that the indicator disappears.



➡ **Press / (Delete) and select [OK] with ▶ on the control button, then press ●.**

The message “Access” appears, and the images with the indicator have been deleted.

To cancel deleting

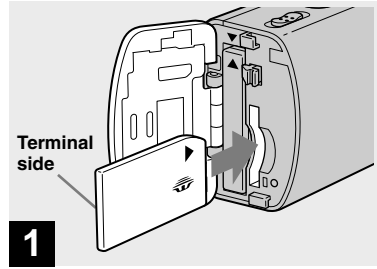
Select [Exit] with ◀ on the control button, then press ●.

To delete all the images in the folder

Select [All In This Folder] with ▶ on the control button in step 2, then press ●. Select [OK], then press ●. All of the unprotected images in the folder are deleted. To cancel deleting, select [Cancel], then press ●.

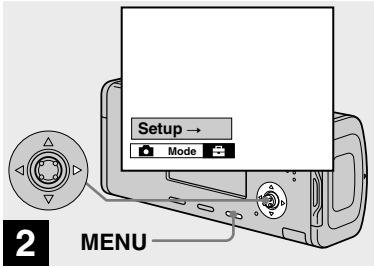
- You can also delete movies (page 77).

Formatting a “Memory Stick Duo”



➡ **Insert the “Memory Stick Duo” you want to format into the camera.**

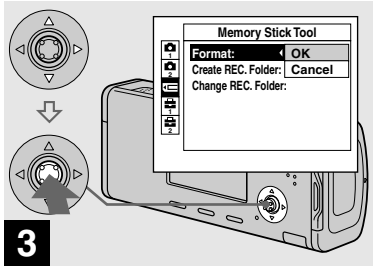
- The term “formatting” means preparing a “Memory Stick Duo” to record images; this process is also called “initialization.”
- The “Memory Stick Duo” supplied with your camera and commercially available “Memory Stick Duo” are already formatted, and can be used immediately.
- **Note that formatting the “Memory Stick Duo” erases all the data in the “Memory Stick Duo” even if images are protected, and these images cannot be recovered.**



➡ **Turn on the camera, then press MENU.**
Press ► on the control button to advance to 🧰, then press ► again.

The Setup screen appears.

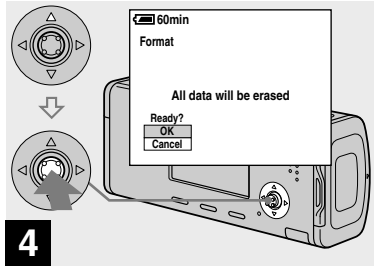
- This operation is available no matter what position the mode switch is in.



➡ **Select 🧰 (Memory Stick Tool) with ▲/▼ on the control button. Select [Format] with ►, then press ►.**
Select [OK] with ▲, then press ●.

To cancel the formatting

Select [Cancel] with ▼ on the control button, then press ●.

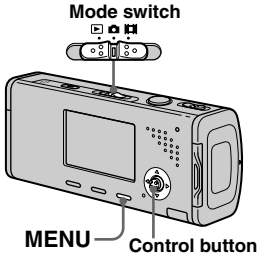


➡ **Select [OK] with ▲ on the control button, then press ●.**

The message “Formatting” appears. When this message disappears, the format is complete.

How to setup and operate your camera

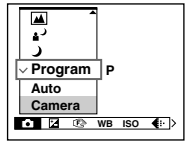
The usage of the menus and Setup screen items is described below.



Changing the menu settings

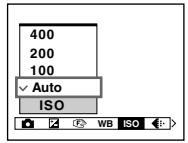
1 Press MENU.

The menu appears.



- The displayed items differ according to the mode switch position.

2 Press ◄/► on the control button to select the item you want to set.



- When the mode switch is set to ►, press ● on the control button after selecting the item.

3 Press ▲/▼ on the control button to select the desired setting.

The selected setting is enlarged and the setting is entered.

When the ▲/▼/◄/► marks appear with an item

There are items that are not displayed on the screen. Press ▲/▼/◄/► on the control button to display these items.

To turn off the menu display

Press MENU again.

- You cannot select items displayed in gray.
- For a detailed description of the menu items, see page 109.

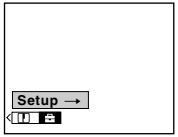
Changing the items in the Setup screen

1 Press MENU.

The menu appears.

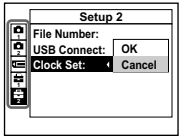
2 Press ► on the control button to advance to 🧰, then press ► again.

The Setup screen appears.



3 Press ▲/▼/◄/► on the control button to select the item you want to set.

The frame of the selected item turns yellow.



4 Press ● on the control button to enter the setting.

To turn off the Setup screen display

Press MENU again.

To return to the menu from the Setup screen

Press ◄ on the control button to return to the position enclosed by the frame in step **3**, then press ◄ again.

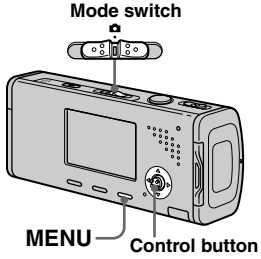
- For a detailed description of the Setup items, see page 112.

Deciding the still image quality

You can select the still image quality from [Fine] (high quality) or [Standard].

Before operation

When shooting still images, set 📷 (Camera) in the menu to other than [Auto] (pages 46 and 109).

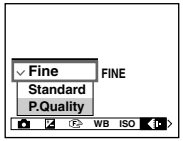


1 **Set the mode switch to .**

2 **Press MENU.**

The menu appears.

3 **Select (P.Quality) with ◄/►, then select the desired image quality with ▲/▼.**

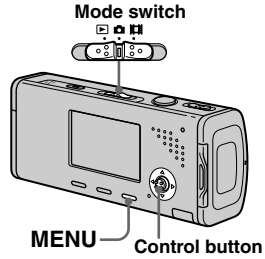


Creating or selecting a folder

Your camera can create multiple folders within a “Memory Stick Duo”. You can select the folder used to store images before shooting, which is convenient for organizing images.
When not creating a new folder, “101MSDCF” folder is selected as the recording folder.
You can create folders up to “999MSDCF”.

Before operation

Set the menu to the Setup screen (pages 47 and 112).

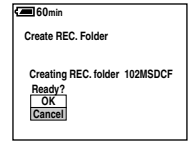


- Up to 4,000 images can be stored in one folder. When the folder capacity is exceeded, a new folder is automatically created.

Creating a new folder

1 **Select (Memory Stick Tool) with ▲/▼, [Create REC. Folder] with ►/▲/▼, and [OK] with ►/▲, then press ●.**

The creating folder screen appears.



2 **Select [OK] with ▲, then press ●.**

A new folder is created with a number one higher than the largest number in the “Memory Stick Duo”, and the folder becomes the recording folder.

To cancel folder creation

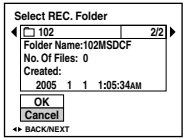
Select [Cancel] in step **1** or **2**.

- Once you create a new folder, you cannot delete the new folder with the camera.
- Images are recorded in the newly created folder until a different folder is created or selected.

Changing the recording folder

1 Select (Memory Stick Tool) with ▲/▼, [Change REC. Folder] with ►/▼, and [OK] with ►/▲, then press ●.

The recording folder selection screen appears.



2 Select the desired folder with ◄/►, and [OK] with ▲, then press ●.

To cancel changing the recording folder

Select [Cancel] in step 1 or 2.

- You cannot select the "100MSDCF" folder as a recording folder (page 85).
- The image is stored in the newly selected folder. You cannot move recorded images to a different folder with this camera.

Choosing an auto focus method

You can set the AF range finder frame and the AF mode.

AF range finder frame

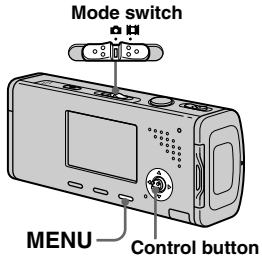
This selects the focus position according to the subject position and size.

AF mode

This sets the focus operation start and stop timing.

Before operation

When shooting still images, set (Camera) in the menu to other than [Auto] (pages 46 and 109).



Choosing a focus range finder frame — AF range finder

Multipoint AF ( )

The camera calculates the distance in five areas to the left, right, top, bottom and in the center of the image, letting you shoot using the auto focus function without worrying about the image composition. This mode is useful when it is difficult to focus on the subject because it is not in the center of the frame. You can check the position where the focus was adjusted using the green frame.
The factory setting is the Multipoint AF.

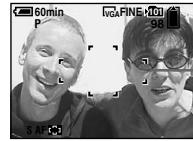
Center AF ( )

This mode is useful for focusing on a subject near the center of the frame. Use together with the AF lock function lets you shoot in the desired image composition.

1 Set the mode switch to or .

2 Press MENU.
The menu appears.

3 Select (Focus) with ◄/►, then select the desired AF range with ▲/▼.



The focus is adjusted automatically. The color of the AF range finder frame changes from white to green.

- When you are shooting movies and you choose Multipoint AF, the distance to the center of the screen is estimated as an average, so the AF works even with a certain amount of vibration. The AF range finder frame is . Center AF automatically focuses only on selected frame, so these are convenient when you want to focus only on what you aim at.
- When you use the digital zoom or AF illuminator, priority AF movement is given to subjects in or near the center of the frame. In this case the or indicator flashes and the AF range finder frame is not displayed.
- Some settings cannot be selected depending on the Scene Selection mode (page 39).

Choosing a focus operation — AF Mode

Single AF (S AF)

This mode is useful for shooting stationary subjects. The focus is not adjusted before the shutter button is pressed and held halfway down. When the shutter button is pressed and held halfway down and AF lock is complete, the focus is locked. The factory setting is Single AF.

Monitoring AF (M AF)

The camera automatically adjusts the focus before the shutter button is pressed and held halfway down, letting you compose images with the focus already adjusted. When the shutter button is pressed and held halfway down and AF lock is complete, the focus is locked.

- Battery consumption may be faster than in Single AF mode.

Before operation

Set the menu to the Setup screen (pages 47 and 112).

1 Select (Camera 1) with ▲, then select [AF Mode] with ►/▲.

2 Select the desired mode with ►/▲/▼, then press ●.

Shooting techniques

When shooting with the subject at the edge of the frame, or when using Center AF, the camera may focus on the center instead of on the subject at the edge of the frame. In a case like this, use AF lock to focus on the subject, and then recompose the picture and shoot.

Compose the shot so that the subject is centered in the AF range finder, and press the shutter button halfway down.
When the AE/AF lock indicator stops flashing and remains on, return to the fully composed shot, and press the shutter button fully down.



AF range finder frame

AE/AF lock indicator

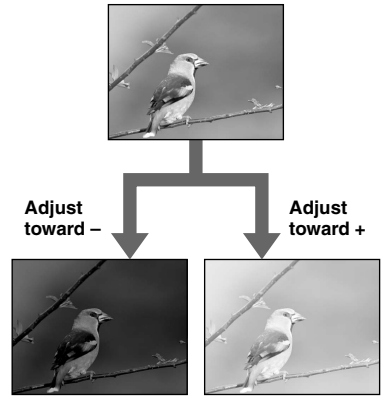


- When you are using AF lock, you can capture an image with the correct focus even if the subject is at the edge of the frame.
- You can carry out the AF lock adjustment process before you press the shutter button fully down.

Adjusting the exposure

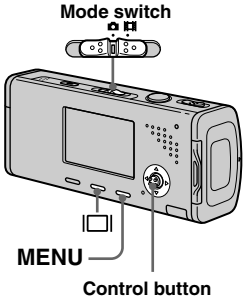
— EV adjustment

You can manually adjust the exposure determined by the camera. Use this mode when the proper exposure cannot be obtained, for example, when the contrast (difference between light and dark) between the subject and the background is extremely large.
The compensation value can be set in 1/3EV steps in the range from +2.0EV to –2.0EV.



Before operation

When shooting still images, set 📷 (Camera) in the menu to other than [Auto] (pages 46 and 109).



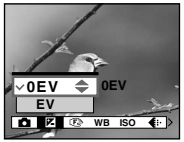
1 Set the mode switch to 📷 or 🎞.

2 Press MENU.

The menu appears.

3 Select ± (EV) with ◄.

The value of the exposure adjustment is displayed.



4 Select the desired exposure value with ▲/▼.

Adjust the exposure value while checking the brightness of the background.

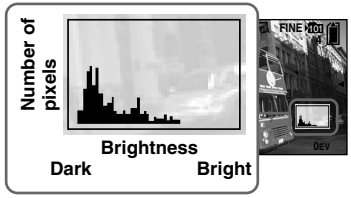
To reactivate auto exposure

In step 4, select [0EV].

- If a subject is being shot in extremely bright or dark conditions, or the flash is used, the exposure adjustment may not be effective.

Displaying a histogram

A histogram is a graph showing the brightness of an image. The horizontal axis shows the brightness, and the vertical axis shows the number of pixels. The graph display indicates a bright image when skewed to the right side, a dark image when skewed to the left side.
A histogram can be used to check the exposure when the screen is difficult to see during recording and playback.



1 Set the mode switch to 📷.

2 Press ▭ to display the histogram.

3 Adjust the exposure based on the histogram.

- The histogram also appears when the (Camera) in the menu is set to [Auto], but you cannot adjust the exposure.
- The histogram also appears when you press |▭| while playing back a single image (page 40) or during Quick Review (page 29).
- The histogram does not appear in the following cases:
  – When the menu is displayed
  – When using playback zoom
  – When recording or playing back movies
- [⊗] appears and the histogram does not appear in the following cases:
  – When recording in the digital zoom area
  – When the image size is [3:2]
  – When playing back Multi Burst images
  – When rotating a still image
- The histogram before recording represents the histogram of the image displayed on the LCD screen at the time. A difference occurs in the histogram before and after you press the shutter button. After shooting an image, check the histogram while playing back a single-image or during Quick Review.
  In particular a large difference may appear in the following cases:
  – When the flash strobes
  – When the shutter speed is slow or high
- The histogram may not appear for images recorded using other cameras.

Shooting techniques

When shooting images, the camera automatically sets the exposure.
When shooting a whitish overall image such as a backlit subject or a snowy scene, the camera may judge that the subject is bright and set a darker exposure for the image. In such cases, adjusting the exposure in the + (plus) direction is effective.



Adjust in the + direction



When shooting a dark subject that fills the frame, the camera may judge that the subject is dark and set a brighter exposure for the image. In such cases, adjusting the exposure in the – (minus) direction is effective.



Adjust in the – direction



Refer to the histogram and adjust so that the image is not overexposed (white out) or underexposed (black out).

Try various images with different exposures to find the brightness that suits your taste.

Selecting the metering method

You can select the metering mode that sets which part of the subject to measure to determine the exposure.

Multi-pattern metering (No indicator)

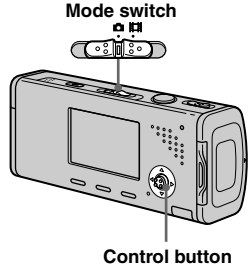
The image is divided into multiple regions and metering is performed for each region. The camera judges the subject position and background brightness, and determines a well-balanced exposure.
The factory setting is the multi-pattern metering.

Spot metering (⊡)

Metering is performed for only a part of the subject. This lets you shoot images that are not too dark even when the subject is backlit, or adjust the exposure to the subject when there is strong contrast between the subject and the background.

Before operation

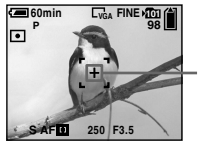
When shooting still images, set 📷 (Camera) in the menu to other than [Auto] (pages 46 and 109).



1 Set the mode switch to 📷 or 🎞.

2 Press ▶ (⊡) to turn spot metering on.

The spot metering cross hair appears.



To cancel spot metering

Press ▶ (⊡) again to turn spot metering off. The spot metering cross hair disappears, and the camera returns to multi-pattern metering.

- When using spot metering, to focus on the metering position, setting ☞ (Focus) to [Center AF] is recommended (page 50).

Adjusting color tones

— White Balance

You can set the white balance mode according to your shooting conditions. The apparent color of the subject is affected by the lighting conditions. When you want to fix the light source imaging conditions, or when the color of the entire image seems to be a bit unnatural, we recommend that you adjust the white balance setting.

Auto (No indicator)
Adjusts the white balance automatically. The factory setting is Auto.

☀ (Daylight)
Shooting outdoors, shooting night scenes, neon signs, fireworks or sunrise, or shooting just before and after sundown

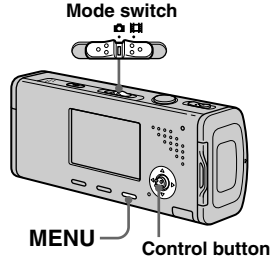
☁ (Cloudy)
Shooting under a cloudy sky

(Fluorescent)
Shooting under fluorescent lighting

(Incandescent)
- Places where the lighting conditions change quickly
- Under bright lighting such as photography studios

Before operation

When shooting still images, set 📷 (Camera) in the menu to other than [Auto] (pages 46 and 109).



1 Set the mode switch to 📷 or 🎞.

2 Press MENU.
The menu appears.

3 Select [WB] (White Bal) with ◀/▶, then select the desired setting with ▲/▼.

To reactivate auto adjustment

Select [Auto] in step 3.

- Under fluorescent lights that flicker, the white balance adjustment function may not work correctly even though you select (Fluorescent).
- Some settings cannot be selected depending on the Scene Selection mode (page 39).

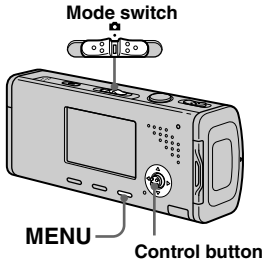
Adjusting the flash level

— Flash Level

You can adjust the amount of flash light.

Before operation

Set (Camera) in the menu to other than [Auto] (pages 46 and 109).



1 Set the mode switch to .

2 Press MENU.

The menu appears.

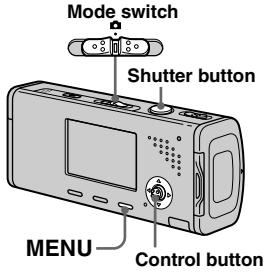
3 Select [±] (Flash Level) with ◄/►, then select the desired setting with ▲/▼.

+: Makes the flash level higher than normal.
Normal: Normal setting.
–: Makes the flash level lower than normal.

- You may not be able to set the flash level a depending on the Scene Selection mode (page 39).

Shooting continuously

This mode is used for continuous shooting. The maxium number of images you can shoot per one shooting depends on the image size and image quality settings.



- When the battery power decreases with use or the capacity of the “Memory Stick Duo” is full, recording stops even if you press and hold the shutter button.

1 Set the mode switch to .

2 Press MENU.

The menu appears.

3 Select [Mode] (REC Mode) with ◄/►, then select [Burst] with ▲/▼.

4 Shoot the image.

When you press and hold down the shutter button, the camera records the maximum number of images in succession. If you release the shutter button, shooting will stop at that point. When "Recording" disappears, you can shoot the next image.

The maximum number of images shot continuously

(Units: images)

Image quality / Image size	Fine	Standard
4M	4	6
3:2	4	6
3M	4	7
1M	10	18
VGA (E-Mail)	30	30

To return to normal mode

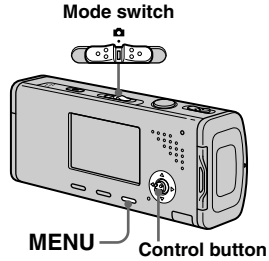
Select [Normal] in step **3**.

- The flash is set to (No flash).
- When recording with the self timer, a series of maximum five images are recorded each time you press the shutter button.
- You may not be able to shoot images in succession depending on the Scene Selection mode (page 39).

Recording 16 frames in succession

— Multi Burst

This mode records 16 frames in succession each time you press the shutter button. This is convenient for checking your form in sports, for example.



1 Set the mode switch to .

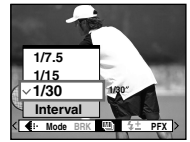
2 Press MENU.

The menu appears.

3 Select [Mode] (REC Mode) with ◄/►, then select [Multi Burst] with ▲.

4 Select (Interval) with ◄/►, then select the desired frame interval with ▲/▼.

You can choose the frame interval from [1/7.5], [1/15] or [1/30] second.



5 Shoot the image.

A continuous burst of 16 frames are recorded within a single still image (image size 1M).

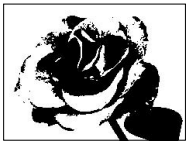
- You cannot use the following functions in Multi Burst mode:
  – Smart zoom
  – Flash
  – Inserting the date and time
- When (Camera) in the menu is set to [Auto], frame interval is automatically set to [1/30] second.
- See page 63 to play back images recorded in Multi Burst mode using this camera.
- For the number of images that can be recorded in Multi Burst mode, see page 108.
- You may not be able to shoot images in Multi Burst mode depending on the Scene Selection mode (page 39).

Shooting with special effects

— Picture Effect

You can digitally process images to obtain special effects.

B&W



The picture is monochrome (black and white).

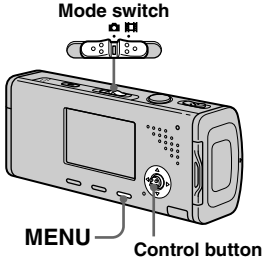
Sepia



The picture is sepia-toned like an old photograph.

Before operation

When shooting still images, set (Camera) in the menu to other than [Auto] (pages 46 and 109).



1 Set the mode switch to or .

2 Press MENU.

The menu appears.

3 Select [PFX] (P. Effect) with ◄/►, then select the desired mode with ▲/▼.

4 Shoot the image.

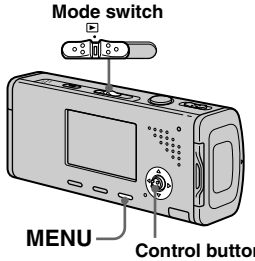
To cancel Picture Effects

Select [Off] in step 3.

- Picture Effect setting is not maintained when the power is turned off.

Selecting the folder and playing back images

Select the folder that images you want to play back are stored.

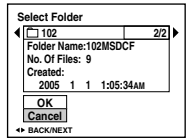


1 **Set the mode switch to ▶.**

2 **Press MENU.**
The menu appears.

3 **Select 🗀 (Folder) with ◀, then press ●.**

4 **Select the desired folder with ◀/▶.**



5 **Select [OK] with ▲, then press ●.**

To cancel the selection

In step **5**, select [Cancel].

When multiple folders are created in the "Memory Stick Duo"

When the first or last image in the folder is displayed, the following indicators appear on the screen.
↵: Moves to the previous folder.
↳: Moves to the next folder.
↵↳: Moves to both the previous and next folders.

Single screen



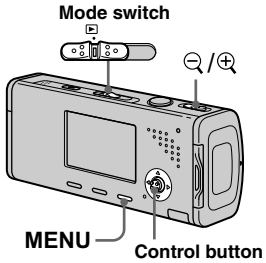
Index screen



- When no images are stored in the folder, "No file in this folder" appears.

Enlarging a portion of a still image

You can enlarge a part of an image up to five times the original size.



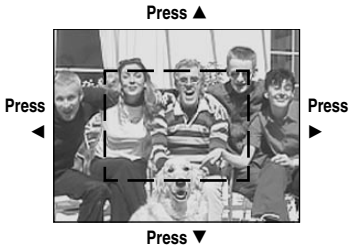
Enlarging an image — Playback zoom

1 Set the mode switch to ▶.

2 Display the image to be enlarged with ◀/▶.

3 Slide ⊕ (playback zoom) to the T side to zoom in on the image.

4 Select the desired portion of the image with ▲/▼/◀/▶.



▲: To view more of the top of the image
▼: To view more of the bottom of the image
◀: To view more of the left side of the image
▶: To view more of the right side of the image

5 Adjust the image size with the ⊖/⊕ (playback zoom).



To cancel playback zoom

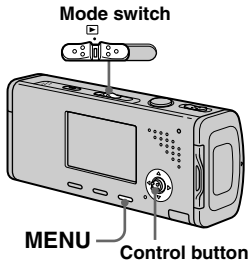
Press ●.

- You cannot use playback zoom for movies and Multi Burst images.
- If you slide the ⊖ (playback zoom) to the W side while a non-enlarged image is displayed, the LCD screen switches to the index screen. (page 41)
- You can enlarge the images displayed with the Quick Review function (page 29) by performing steps **3** to **5**.

Playing back successive images

— Slide Show

You can play back recorded images in order. This function is useful for checking your images or for presentations, etc.



1 Set the mode switch to ▶.

2 Press MENU.
The menu appears.

3 Select (Slide) with ◀/▶, then press ●.
Set the following items with ▲/▼/◀/▶.

Interval
3 sec/5 sec/10 sec/30 sec/1 min

Image
Folder: Plays back all images in the selected folder.
All: Plays back all images stored in the "Memory Stick Duo".

Repeat
On: Plays back images in a continuous loop.
Off: After all the images have been played back, the slide show ends.

4 Select [Start] with ▼/▶, then press ●.
The slide show begins.

To cancel the slide show setting

Select [Cancel] in step 3.

To stop slide show playback

Press ●, select [Exit] with ▶, then press ● again.

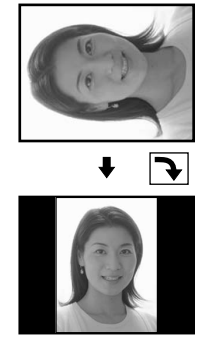
To skip to the next/previous image during the slide show

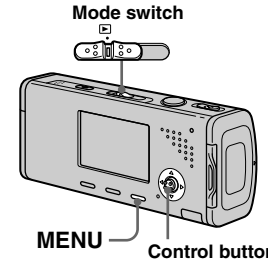
Press ▶ (next) or ◀ (previous).

- The interval settings time are just guidelines, so it may vary depending on the image.

Rotating still images

You can rotate an image recorded in portrait orientation and display it in landscape orientation.





1 **Set the mode switch to ▶, and display the image to rotate.**

2 **Press MENU.**
The menu appears.

3 **Select ⟳ (Rotate) with ◀/▶, then press ●.**

4 **Select ↶ ↷ with ▲, then rotate the image with ◀/▶.**

5 **Select [OK] with ▲/▼, then press ●.**

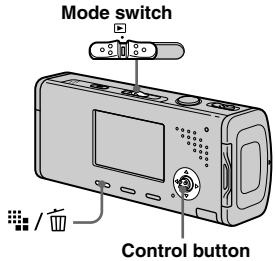
To cancel rotation

Select [Cancel] in step **4** or **5**, then press ●.

- You cannot rotate protected images and movies and Multi Burst images.
- You may not be able to rotate images shot with other cameras.
- When viewing images on a computer, the image rotation information may not be reflected depending on the application software.

Playing back images shot in Multi Burst mode

You can play back Multi Burst images continuously or play them back frame by frame. This function is used for checking the image.



- When Multi Burst images are played back on a computer or on a camera without the Multi Burst function, the 16 frames you shot will be displayed at the same time as part of one image.
- You cannot cut the Multi Burst image.

Playing back continuously

1 **Set the mode switch to ▶.**

2 **Select the Multi Burst image with ◀/▶.**
The selected Multi Burst image is played back continuously.



To pause playback

Press ●. To resume playback, press ● again. The playback starts from the frame displayed on the LCD screen.

Playing back frame by frame

1 Set the mode switch to ▶.

2 Select the Multi Burst image with ◀/▶.

The selected Multi Burst image is played back continuously.

3 Press ● when the desired frame is displayed.

"Step" appears.



4 Advance the frame with ◀/▶.

▶: A next frame is displayed. When you keep and press ▶, the frame advances.

◀: A previous frame is displayed. When you keep and press ◀, the frame advances in the reverse direction.

To return to the normal playback

Press ● in step 4. The playback starts from the frame displayed on the LCD screen.

To delete shot images

When using this mode, you cannot delete only certain frames. When you delete images, all 16 of the frames are deleted at the same time.

1 Display the desired Multi Burst image to delete.

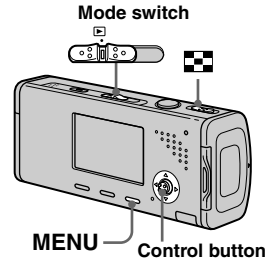
2 Press / (Delete).

3 Select [Delete], then press ●. All of the frames are deleted.

Protecting images

— Protect

This function protects images against accidental erasure.



- Note that formatting the "Memory Stick Duo" erases all the data in the "Memory Stick Duo" even if images are protected, and these images cannot be recovered.
- It may take some time to protect the images.

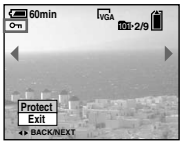
In single-image mode

1 Set the mode switch to ▶.

2 Display the image you want to protect with ◀/▶.

3 Press MENU.
The menu appears.

4 Select 🔑 (Protect) with ◀/▶, then press ●.
The displayed image is protected. The 🔑 (protect) indicator appears on the image.



5 To continue and protect other images, select the desired image with ◀/▶, then press ●.

To cancel the protection

Press ● again in step 4 or 5. The 🔑 indicator disappears.

In index mode

1 Set the mode switch to ▶, then slide the ▪ (index) to the W side to display the index screen.

2 Press MENU.
The menu appears.

3 Select 🔑 (Protect) with ◀/▶, then press ●.

4 Select [Select] with ◀/▶, then press ●.

5 Select the image you want to protect with ▲/▼/◀/▶, then press ●.
The green 🔑 indicator appears on the selected image.



6 Repeat step 5 to protect other images.

7 Press MENU.

8 Select [OK] with ▶, then press ●.
The 🔑 indicator turns white. The selected images are protected.

To exit the Protect function

Select [Cancel] in step 4 or select [Exit] in step 8, then press ●.

To cancel individual protection

Select the image to be unprotected with ▲/▼/◀/▶ in step 5, then press ●. The 🔑 indicator turns gray. Repeat this operation for all images that are to be unprotected. Press MENU, select [OK], and then press ●.

To protect all images in the folder

Select [All In This Folder] in step 4, and press ●. Select [On], then press ●.

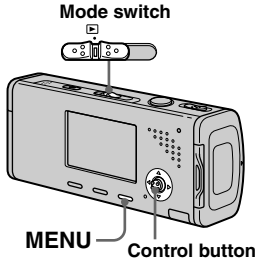
To cancel protection of all images in the folder

Select [All In This Folder] in step 4, and press ●. Select [Off], then press ●.

Changing image size

— Resize

You can change the image size of a recorded image, and save it as a new file. You can resize to the following sizes: 4M, 3M, 1M, VGA
The original image is retained even after resizing.



1 **Set the mode switch to ▶.**

2 **Display the image you want to resize with ◀/▶.**

3 **Press MENU.**
The menu appears.

4 **Select (Resize) with ◀/▶, then press ●.**

5 **Select the desired size with ▲/▼, then press ●.**
The resized image is recorded in the recording folder as the newest file.

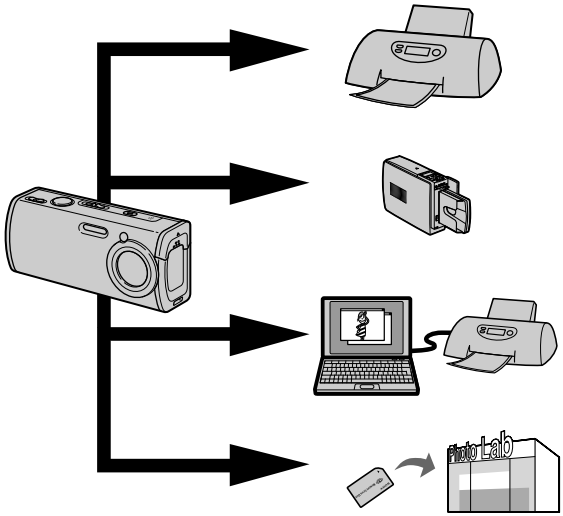
To cancel resizing

Select [Cancel] in step **5**.

- You cannot change the size of movies or Multi Burst images.
- When you change from a small size to a large size, the image quality deteriorates.
- You cannot resize to an image size of 3:2.
- When you resize a 3:2 image, the upper and lower black portions will be displayed on the image.

Printing still images

You can print images shot with your camera by the following methods.



Direct printing (PictBridge compatible printer) (page 68)

You can print by connecting the camera directly to a PictBridge compatible printer.

Direct printing (“Memory Stick” compatible printer)

You can print using a “Memory Stick” compatible printer. See the users manual supplied with the printer for details.

Printing with a computer (page 91)

You can print images that have been loaded to a computer using the “PicturePackage” software included on the CD-ROM supplied with your camera. See the users manual supplied with the printer for the printer operation method.

Printing at a shop (page 73)

Just bring the “Memory Stick Duo” and the Memory Stick Duo Adaptor to a print service shop. You can also mark the images you want to print beforehand with print marks.

Direct printing

Even if you do not have a computer, you can easily print images shot using your camera by connecting the camera to a PictBridge compliant printer. For preparation, you only set the USB connection on the Setup screen and connect the camera to the printer with the USB cable.
Using a PictBridge compliant printer easily prints the index print*.

PictBridge

* An index print function may not be provided depending on a printer.

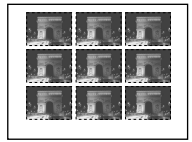
- Using the AC Adaptor is recommended to prevent the power from turning off partway through printing.
- You cannot print movies.
- When an error notification is received from the connected printer, the indicator flashes for approximately five seconds. Check the connected printer.

Single print



Index print





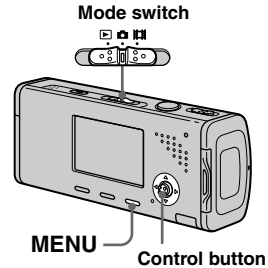
- If you arrange the same image side by side, select [This image] in single-image mode, then set [Index] to [On] (page 70).
- The number of images printed on a single index print differs according to the printer.

Preparing the camera

Set the USB mode on the camera to connect the camera with a printer.

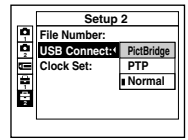
Before operation

Set the menu to the Setup screen (pages 47 and 112).



1 Select (Setup 2) with ▼, then select [USB Connect] with ▲/▼/►.

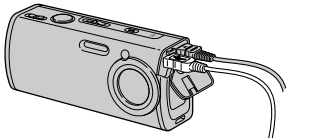
2 Select [PictBridge] with ►/▲, then press ●.



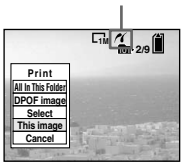
The USB mode is set.

Connecting the camera to the printer

Connect the ψ (USB) jack of the camera and the USB jack on the printer with the USB cable (supplied). Turn on the camera and the printer.
The camera turns to playback mode regardless of the mode switch position, and an image in the selected playback folder and the print menu appear on the LCD screen.



After the connection is made, the indicator appears on the LCD screen.



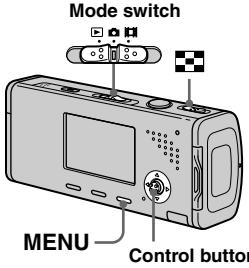
Printer

When [USB Connect] is not set to [PictBridge] on the Setup screen

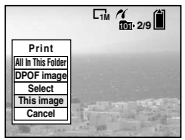
Even if you turn on the camera, you cannot use the PictBridge function. Disconnect the USB cable from the camera and set [USB Connect] to [PictBridge]. (page 68)

Printing in single-image mode

When you connect the camera and a printer, the print menu appears.



1 Select the desired printing type with ▲/▼, then press ●.



All In This Folder
Prints all the images in the folder.

DPOF image
Prints all the images with the mark (page 73) regardless of the displayed image.

Select

Selects the images in order. Prints all the selected images.

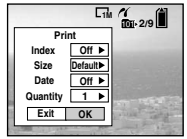
1 Select the image you want to print with ◀/▶, then press ●.
The ✓ mark appears on the selected image.
- Repeat this step to print other images.

2 Select [Print] with ▼, then press ●.

This image

Prints the currently displayed image.

2 Set the print setting with ▲/▼/◀/▶.



Index

Select [On] to print index-images.

Size

Selects the desired paper size.

Date

To insert the date and time on images, select [Date] or [Day&Time].

- If you select [This image] in step 1 and print index-images, the same images are arranged side by side.
- When you select [Date] for [Date] setting, the date will be inserted in the order set in “Setting the date and time” (page 18). Date function may not be provided depending on a printer.
- Setting items the printer does not support cannot be displayed.

3 Select [Quantity] with ▼, select the number of sheets with ◀/▶.

When [Index] is set to [Off]: the number of sheets of the selected image.
When [Index] is set to [On]: the number of sheets of index-images.
When [This image] is selected in step 1, this is the number of the same image that can be arranged on a single sheet.

- Depending on the number of index-images, it may not be possible to arrange all of the images on a single sheet.

4 Select [OK] with ▼/▶, then press ●.

The image is printed.
Do not disconnect the USB cable while the (Not disconnect USB cable) indicator appears on the LCD screen.



To cancel printing

Select [Cancel] in step 1 or select [Exit] in step 4.

To print other images

Select the image with ◀/▶ after step 4, then select [Print].

Printing in index mode

If you connect your camera to the printer, the print menu appears. Press [Cancel] to exit the print menu.

1 Slide the (Index) to the W side to display the index screen.

2 Press MENU.

The menu appears.

3 Select (Print) with ▶, then press ●.

4 Select the desired printing type with ◀/▶, then press ●.



Select

Selects the images in order. Prints all the selected images.

1 Select the image you want to print with ▲/▼/◀/▶, then press ●. The ✓ mark appears on the selected image.
   • Repeat this step to print other images.
2 Press MENU.

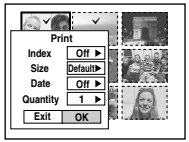
DPOF image

Prints all the images with the mark (page 73) regardless of the displayed image.

All In This Folder

Prints all the images in the folder.

5 Set the print setting with ▲/▼/◀/▶.



Index

Select [On] to print index-images.

Size

Selects the desired paper size.

Date

To insert the date and time on images, select [Date] or [Day&Time].

- When you select [Date] for [Date] setting, the date will be inserted in the order set in "Setting the date and time" (page 18). Date function may not be provided depending on a printer.

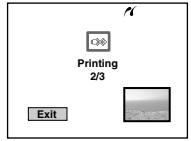
6 Select [Quantity] with ▼, select the number of sheets with ◀/▶.

When [Index] is set to [Off]: the number of sheets of the selected image.
When [Index] is set to [On]: the number of sheets of index-images.
When [This image] is selected in step 1, this is the number of the same image that can be arranged on a single sheet.

- Depending on the number of index-images, it may not be possible to arrange all of the images on a single sheet.

7 Select [OK] with ▼/▶, then press ●.

The image is printed.
Do not disconnect the USB cable while the (Not disconnect USB cable) indicator appears on the LCD screen.



To cancel printing

Select [Cancel] in step 4 or select [Exit] in step 7.

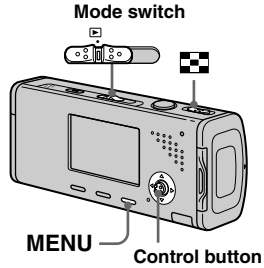
Having images printed at a shop

Note the following items when having images printed at a shop.

- Contact the print service shop to determine what “Memory Stick” types are supported.
- When using a print service shop that does not support “Memory Stick”, copy the images to a CD-R, etc., and bring that to the shop instead.
- Be sure to also bring the Memory Stick Duo Adaptor to the shop.
- Be sure to make a backup copy of the data before using a print service shop.

Marking print marks

Marking images you want to have printed beforehand with print marks is convenient when having images printed at a print service shop.



- You cannot mark movies.
- When you mark images shot in Multi Burst mode, all the images are printed on one sheet divided into 16 panels.
- You cannot set the number of prints.

Marking print marks in single-image mode

1 **Set the mode switch to ▶.**

2 **Display the image you want to mark with ◀/▶.**

3 **Press MENU.**
The menu appears.

4 **Select DPOF (DPOF) with ◀/▶, then press ●.**
The mark is marked on the displayed image.



5 **To continue and mark other images, display the desired image with ◀/▶, then press ●.**

To unmark the mark

Press ● again in step 4 or 5. The mark disappears.

Marking print marks in index mode

1 Set the mode switch to ▶, then slide the ▪▪▪ (index) to the W side to display the index screen.

2 Press MENU.

The menu appears.

3 Select DPOF (DPOF) with ◀/▶, then press ●.

4 Select [Select] with ◀/▶, then press ●.

- You cannot mark the mark in [All In This Folder].

5 Select the image you want to mark with ▲/▼/◀/▶, then press ●.

The green mark appears on the selected image.



6 Repeat step 5 to mark other images.

7 Press MENU.

8 Select [OK] with ▶, then press ●.

The mark turns white. The mark setting is completed.

To unmark marks

Select the images to be unmarked with ▲/▼/◀/▶ in step 5, then press ●.

To unmark all the marks in the folder

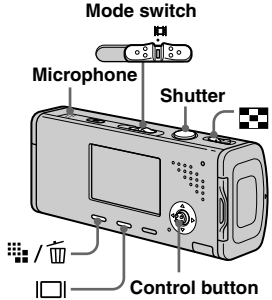
Select [All In This Folder] in step 4, then press ●. Select [Off], then press ●.

To exit the mark function

Select [Cancel] in step 4 or select [Exit] in step 8.

Shooting movies

You can shoot movies with sound using your camera.



1 Set the mode switch to .

2 Press / (Image Size).

The Image Size setup appears.

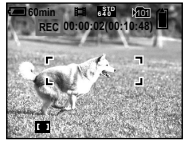
3 Select the desired size with ▲/▼.

You can choose from [640(Fine)], [640(Standard)] and [160].

- [640(Fine)] can be recorded only on "Memory Stick PRO Duo".

4 Press the shutter button fully down.

"REC" appears on the screen and the camera starts recording the image and sound.



- Recording stops when the "Memory Stick Duo" is full.

5 Press the shutter button fully down again to stop recording.

Indicators during shooting

The screen indicators are not recorded. Each time you press , the status of the LCD screen changes as follows: Indicators off → LCD backlight off → Indicators on. A histogram is not displayed.
For a detailed description of the indicators, see page 122.

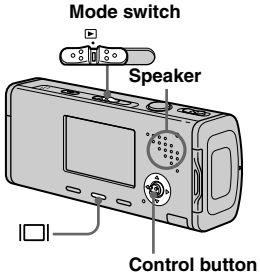
Using the self-timer

Set the mode switch to and follow the procedure on page 31.

- Do not touch the microphone during shooting movies.
- You cannot use the following functions during shooting movies:
  – Changing the zoom scale
  – Flash
  – Inserting the date and time
- For the recording time in each movie mode, see page 108.

Viewing movies on the LCD screen

You can view movies on the LCD screen with sound from the speaker.



1 Set the mode switch to ▶.

2 Select the desired moving image with ◀/▶.

Movies with the image size [640(Fine)] or [640(Standard)] are displayed on the full screen.



- Movies with the image size [160] are displayed a size smaller.

3 Press ●.

The movie and sound are played back. During playback, ▶ (playback) appears on the screen.



To stop playback

Press ● again.

To adjust the volume

Press ▲/▼ to adjust the volume.

To advance or rewind the movie

Press ▶ (cue) or ◀ (rev) during playback. To return to the normal playback, press ●.

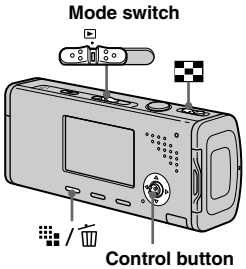
Indicators during viewing movies

Each time you press |▭|, the status of the screen changes as follows: Indicators off → LCD backlight off → Indicators on. A histogram is not displayed.
For a detailed description of the indicators, see page 124.

- The moving images recorded using earlier Sony models may be also displayed a size smaller.

Deleting movies

You can delete unwanted movies.



- You cannot delete protected movies.
- Note that you cannot restore deleted movies.

In single-image mode

1 Set the mode switch to ▶.

2 Display the movie you want to delete with ◀/▶.

3 Press ⁝ / 🗑 (Delete).

The movie has not yet been deleted at this point.

4 Select [Delete] with ▲, then press ●.

The message “Access” appears, and the movie has been deleted.

5 To continue and delete other movie, display the movie you want to delete with ◀/▶, then repeat step 4.

To cancel deletion

Select [Exit] in step 4 or 5.

In index mode

1 Set the mode switch to ▶, then slide ▪ (index) to the W side to display an index screen.

2 Press ⁝ / 🗑 (Delete).

3 Select [Select] with ◀/▶, then press ●.

4 Select the movie you want to delete with ▲/▼/◀/▶, then press ●.

The green 🗑 (Delete) indicator appears on the selected movie.



The movie has not yet been deleted at this point.

5 Repeat step 4 to delete other movies.

6 Press ⁝ / 🗑 (Delete).

7 **Select [OK] with ▶, then press ●.**

The message “Access” appears, and the movie has been deleted.

To cancel deletion

Select [Exit] in step **3** or **7**.

- To delete all the images in the folder, see page 44.

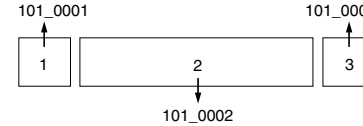
Cutting movies

You can cut movies, or delete unnecessary portions of movies. Cutting or deleting movies is the recommended function to use when the “Memory Stick Duo” capacity is insufficient, or when you attach movies to your e-mail messages.
Note that the original movie is deleted when you cut it.

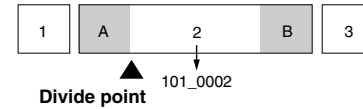
The file numbers assigned when movies are cut

The cut movies are assigned new numbers and recorded as the newest files in the selected recording folder. The original movie is deleted, and that number is skipped.

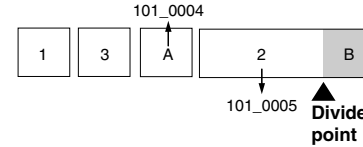
<Example> Cutting a movie numbered 101_0002



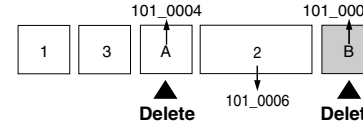
1. Cutting scene A.



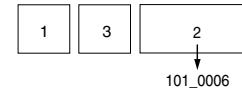
2. Cutting scene B.

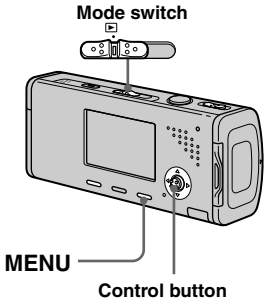


3. Deleting scenes A and B if they are unnecessary.



4. Only the desired scenes remain.





1 Set the mode switch to ▶.

2 Select the movie you want to cut using ◀/▶.

3 Press MENU.

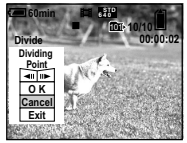
The menu appears.

4 Select ✂ (Divide) with ▶, then press ●. Next, select [OK] with ▲, then press ●.

The playback of the movie starts.

5 Decide on a cutting point.

Press the center ● at the desired cutting point.



When you want to adjust the cutting point, use [◀II/II▶] (frame rewind/forward) and adjust the cutting point using ◀/▶. If you want to change the cutting point, select [Cancel]. The playback of the movie starts again.

6 When you have decided on a cutting point, select [OK] with ▲/▼, and press ●.

7 Select [OK] with ▲, then press ●.

The movie is cut.

To cancel cutting

Select [Exit] in step 5 or 7. The movie appears on the screen again.

- You cannot cut the following images.
  - Still image
  - Movies not long enough to cut (about more than two seconds)
  - Protected movies
- You cannot restore files once you cut them.
- The cut movies are recorded as the newest files in the selected recording folder.

Copying images to your computer

— For Windows users

Recommended computer environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition, Windows XP Home Edition, or Windows XP Professional
The above OS must be installed at the factory. Operation is not assured in an environment upgraded to the operating systems described above or in a multi-boot environment.
CPU: MMX Pentium 200 MHz or faster
USB connector: Provided as standard
Display: 800 × 600 dots or more
High Color (16-bit color, 65,000 colors) or more

- This camera is compatible with Hi-Speed USB (USB 2.0 compliant).
- Connecting with a USB interface that is compatible with Hi-Speed USB (USB 2.0-compliant) allows advanced transfer (high-speed transfer).
- If you connect two or more USB equipment to a single computer at the same time, some equipment, including your camera, may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a USB hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

USB mode

There are two modes for a USB connection when connecting with a computer, [Normal] and [PTP]* modes. The default setting is the [Normal] mode. This section describes the [Normal] mode as an example.

* For a details on the PTP connection, see page 114.

Communication with your computer

When your computer resumes from the suspend or sleep mode, communication between your camera and your computer may not recover at the same time.

When a USB connector is not provided on your computer

When neither a USB connector nor a "Memory Stick" slot is provided, you can copy images using an additional device. See the Sony Website for details.
http://www.sony.net/

Contents of the CD-ROM

■ USB Driver

This driver is needed in order to connect the camera to a computer.
When using Windows XP, you need not install the USB driver.

■ Picture Package

This application is used to transfer images from the camera to a computer easily.
It also allows you to utilize the various functions.
When you install "Picture Package," the USB driver is also installed at the same time.

- The required operations may differ depending on your OS.
- **Close down all applications running on the computer before installing the USB driver and application.**
- When using Windows XP or Windows 2000, log on as Administrator.

Installing the USB driver

When using Windows XP, you need not install the USB driver.
Once the USB driver is installed, you need not install the USB driver.

1 Turn on your computer, and insert the CD-ROM (supplied) into the CD-ROM drive.

Do not connect your camera to your computer at this time.

The install menu screen appears.
If it does not appear, double-click (My Computer) → (PICTUREPACKAGE) in that order.

- When also using the supplied image utility software "Picture Package", click [Picture Package]. The USB driver will be installed when "Picture Package" is installed (page 87).
- **When the computer is in use, shut down all application software before you install the USB driver.**

2 Click [USB Driver] on the title screen.



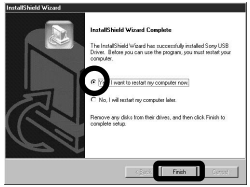
The "InstallShield Wizard" screen appears.

3 Click [Next].



The USB driver installation starts.
When the installation is completed, the screen informs you of completion.

4 Click [Yes, I want to restart my computer now], then click [Finish].

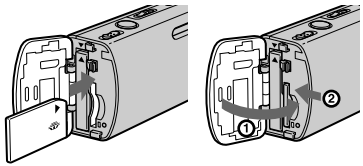


Your computer restarts. Then, you can establish USB connection.

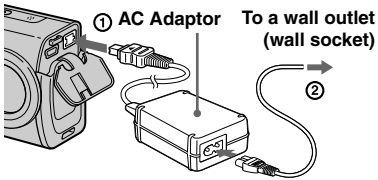
5 Remove the CD-ROM.

Connecting the camera to your computer

1 Insert the "Memory Stick Duo" with the images you want to copy into the camera, then close the battery/"Memory Stick Duo" cover.



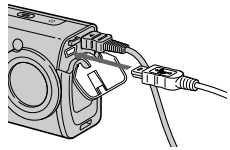
2 Open the jack cover, and connect the AC Adaptor (supplied), then plug the adaptor into a wall outlet (wall socket).



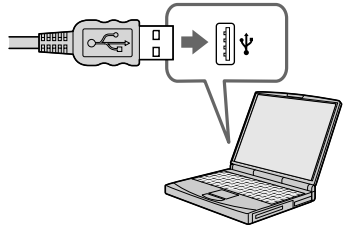
• When you copy images to your computer using the battery pack, copying may be failed or cause data corruption by battery shutoff. We recommend that you use the AC Adaptor.

3 Set the mode switch to ▶. Turn on your conputer and the camera.

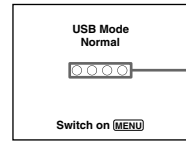
4 Connect the USB cable (supplied) to the ψ (USB) jack of the camera.



5 Connect the USB cable to your computer.



• When using Windows XP, the AutoPlay wizard automatically appears on the desktop. Proceed to page 84.



"USB Mode Normal" appears on the LCD screen of the camera. When a USB connection is established for the first time, your computer automatically runs the used program to recognize the camera. Wait for a while.

* During communication, the access indicators turn red. Do not operate the computer until the indicators turn white.

• If "USB Mode Normal" does not appear in step **5**, press MENU, select [USB Connect], and set it to [Normal].

! Disconnecting the USB cable from your computer, removing the "Memory Stick Duo" from your camera or turning off the camera during USB connection

For Windows 2000, Me, or XP users

1 Double-click on the tasktray.



Double-click here

2 Click (Sony DSC), then click [Stop].

3 Confirm the device on the confirmation window, then click [OK].

4 Click [OK].
Step **4** is unnecessary for Windows XP users.

5 Disconnect the USB cable, remove the "Memory Stick Duo", or turn off the camera.

For Windows 98 or 98SE users

Confirm that the access indicators (page 82) on the screen are turned white and carry out only step **5** above.

Copying images
– Windows 98/98SE/2000/Me

1 Double-click [My Computer], then double-click [Removable Disk].

The contents of the "Memory Stick Duo" inserted in your camera appear.

- This section describes an example of copying images to the "My Documents" folder.
- When the "Removable Disk" icon is not shown, see page 84.
- When using Windows XP, see page 84.

2 Double-click [DCIM], then double-click the folder that the image files you want to copy are stored.

3 Right-click the image file to display the menu, then select [Copy] from the menu.

4 Double-click the [My Documents] folder and right-click on the "My Documents" window to display the menu, then select [Paste] from the menu.

The image files are copied to the "My Documents" folder.

When an image with the same file name exists in the copy destination folder

The overwrite confirmation message appears. When you overwrite the existing image with the new one, the original file data is deleted.

To change the file name

To copy an image file to the computer without overwriting, change the file name to the desired name and then copy the image file. However, note that if you change the file name, you may not be able to play back that image with your camera. To play back images with the camera, perform the operation on page 87.

When a removable disk icon is not shown

1 Right-click [My Computer] to display the menu, then click [Properties].
The "System Properties" screen appears.

2 Display [Device Manager].
① Click [Hardware].
② Click [Device Manager].
• For Windows 98, 98SE, Me users, step ① is unnecessary. Click the [Device Manager] tab.

3 If [Sony DSC] is displayed, delete it.
① Right-click [Sony DSC].
② Click [Uninstall].
The "Confirm Device Removal" screen appears.
• For Windows 98, 98SE, Me users, click [Remove].
③ Click [OK].
The device is deleted.

Try the USB driver installation again using the CD-ROM (page 81).

– Windows XP

Copying images using the Windows XP AutoPlay wizard

1 **Make a USB connection (page 82). Click [Copy pictures to a folder on my computer using Microsoft Scanner and Camera Wizard], then click [OK].**
The "Scanner and Camera Wizard" screen appears.

2 **Click [Next].**
The images stored on the "Memory Stick Duo" are displayed.

3 **Click the checkbox of images that you do not want to copy to your computer to remove the checkmark, then click [Next].**
The "Picture Name and Destination" screen appears.

4 **Select a name and destination for your pictures, then click [Next].**
Image copying starts. When the copying is completed, the "Other Options" screen appears.

5 **Select [Nothing. I'm finished working with these pictures], then click [Next].**
The "Completing the Scanner and Camera Wizard" screen appears.

6 **Click [Finish].**
The wizard closes.

• To continue copying other images, follow the procedure given under ! on page 83 to disconnect the USB cable and reconnect it. Then, perform the procedure from step 1 again.

Viewing the images on your computer

1 Click [Start], then click [My Documents].

The “My Documents” folder contents are displayed.

- This section describes the procedure for viewing copied images in the “My Documents” folder.
- When not using Windows XP, double-click [My Documents] on the desktop.

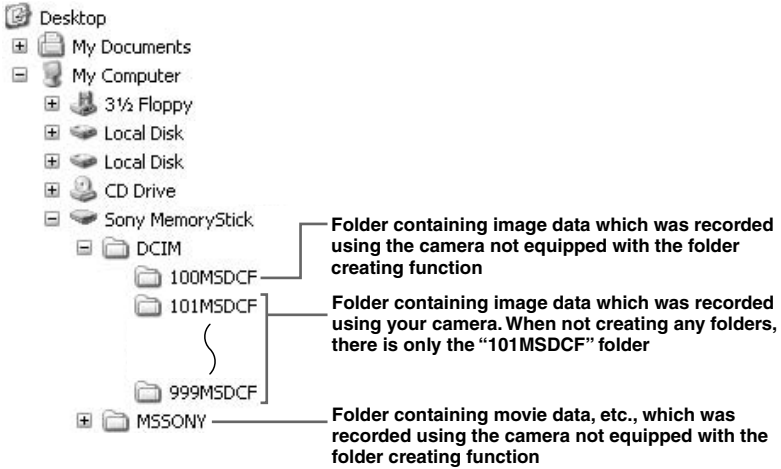
2 Double-click the desired image file.

The image is displayed.

Image file storage destinations and file names

The image files recorded with your camera are grouped as folders in the “Memory Stick Duo”.

Example: when viewing folders on Windows XP



- You cannot record any images to “100MSDCF” or “MSSONY” folders. The images in these folders are available only for viewing.
- For more information about the folder, see pages 48, 60.

Folder	File name	File meaning
101MSDCF to 999MSDCF	DSC0□□□□.JPG	• Still image files shot in – Normal mode (page 26) – Burst mode (page 57) – Multi Burst mode (page 58)
	MOV0□□□□.MPG	• Movie files (page 75)
	MOV0□□□□.THM	• Index image files recorded simultaneously in movie mode (page 75)

• □□□□ stands for any number within the range from 0001 to 9999.
• The numerical portions of a movie file recorded in movie mode and its corresponding index image file are the same.

Viewing image files once copied to a computer with your camera

When an image file copied to a computer no longer remains in a “Memory Stick Duo”, you can view that image again on your camera by copying the image file in the computer to a “Memory Stick Duo”.

- Step **1** is not necessary when the file name set with your camera has not been changed.
- You may be unable to play back some images depending on the image size.
- When an image file has been processed by a computer or when the image file was recorded using a model other than your camera, playback on your camera is not guaranteed.
- When the overwrite confirmation message appears, enter a different number in step **1**.
- When there is no folder, first create a folder with your camera and then copy the image file (page 48).

1 Right-click the image file, then click [Rename]. Change the file name to “DSC0□□□□”.

Enter a number from 0001 to 9999 for □□□□.

- An extension may be displayed depending on the computer settings. The extension for still images is JPG, and the extension for movies is MPG. Do not change the extension.

2 Copy the image file to the “Memory Stick Duo” folder.

① Right-click the image file, then click [Copy].
② Select and double-click the [DCIM] folder from [Removable Disk] or [Sony MemoryStick] in [My Computer].
③ Right-click the [□□□MSDCF] folder in the [DCIM] folder and click [Paste]. □□□ stands for any number within the range from 100 to 999.

Installing “Picture Package” and “ImageMixer VCD2”

“Picture Package” is only for Windows computers.

You can use the “Picture Package” software on your Windows computer to compile the images shot with your camera. When you install “Picture Package,” the USB driver is also installed at the same time.

- When the computer is in use, shut down all application software before you install “Picture Package.”

For computer environment

See page 80 for the basic Windows operating environment. Other system requirements are as follows.

Software: Macromedia Flash Player 6.0 or later, Windows Media Player 7.0 or later, DirectX 9.0b or later
Sound card: 16-bit stereo sound card with speakers
Memory: 64 MB or more (128 MB or more is recommended.)
Hard Disk: Disk space required for installation: approximately 500 MB
Display: Video card (Direct Draw driver compliant) with 4 MB of VRAM

- When automatically creating slide shows (page 91), a Pentium III 500 MHz or faster CPU is required.
- When using “ImageMixer VCD2,” a Pentium III 800 MHz or faster CPU is recommended.
- This software is compatible with DirectX technology. “DirectX” must be installed for use.
- A separate environment for operating the recording device is required in order to write to CD-Rs.

1 Turn on your computer, and insert the CD-ROM (supplied) into the CD-ROM drive.

The installation menu screen appears.

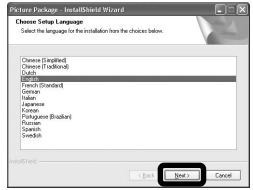
- If you have not yet installed the USB driver (page 81), do not connect the camera to the computer before you install the “Picture Package” software (except for Windows XP).

2 Click [Picture Package/ ImageMixer VCD2].



“Choose Setup Language” screen appears.

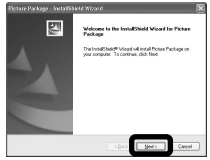
3 Select the desired language, then click [Next].



- This section describes the English screen.

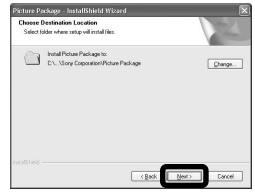
4 Click [Next].

The “License Agreement” screen appears.
Read the agreement carefully. If you accept the terms of the agreement, check the “I accept the terms of the license agreement” checkbox and click [Next].



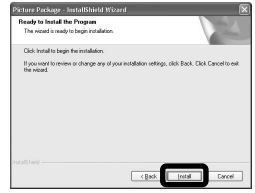


5 Click [Next].



6 Click [Install] on the “Ready to Install the Program” screen.

The installation starts.



When the installation is completed, the “Welcome to setup for ImageMixer VCD2” screen appears.

7 Click [Next], then follow the instructions.



If the "Welcome to setup for Direct X" screen appears after you install the application software, follow the instructions.

8 Confirm if the checkbox of "Yes, I want to restart my computer now" is checked, then click [Finish].

Your computer restarts.



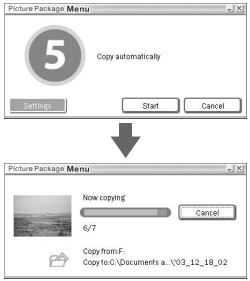
The shortcut icons of "Picture Package Menu" and "Picture Package destination Folder" are displayed.

9 Remove the CD-ROM.

Copying images using "Picture Package"

Connect the camera and your computer with the USB cable.

"Picture Package" starts up automatically and the images are copied to the computer automatically. After the images are copied, "Picture Package Viewer" starts up and the images copied are displayed.



- Normally "Picture Package" and "Date" folders are created inside the "My Picture" folder, and all of the image files recorded with the camera are copied into these folders.
- If "Picture Package" cannot copy images automatically, start up "Picture Package Menu" and check [Settings] in [Copy automatically].

Using "Picture Package"

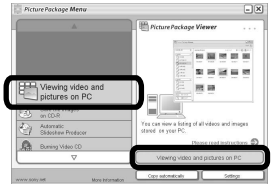
Start up the [Picture Package Menu] on the desktop to use the various functions.

- The initial screen may differ depending on your computer. You can change the menu display order to suit your taste by clicking [Settings] at the lower-right corner of the screen.
- For details on the use of the application software, click ⓘ at the upper-right corner of each screen to show the on-line help.

Technical support of "Picture Package" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Viewing images on a computer

Click [Viewing video and pictures on PC] on the left side of the screen, then click [Viewing video and pictures on PC] in the lower-right corner of the screen.



The screen used for viewing images appears.

Storing images on a CD-R

Click [Save the images on CD-R] on the left side of the screen, then click [Save the images on CD-R] in the lower-right corner of the screen.



The screen used for storing images on a CD-R appears.

- A CD-R drive is required to store images on a CD-R. For further information on compatible drives, see the following home page of the Pixela User Support Center.
  http://www.ppackage.com/

Creating a video CD with a menu (“ImageMixer VCD2”)

“ImageMixer VCD2” is compatible with High resolution still image video CD.

1 Click [Burning Video CD] on the left side of the screen, then click [Burning Video CD] in the lower-right corner of the screen.



The “ImageMixer VCD2” screen appears.

2 Click [Video CD].

3 Select the folder in which the desired images are stored.

① Select the desired folder on the left frame, then click [Add]. The selected folder moves to the right frame.
② Click [Next].

4 Set up the menu background, buttons, titles, and so on, then click [Next].

Confirm the set up according to your preferences.

5 Confirm the preview of the Video CD file.

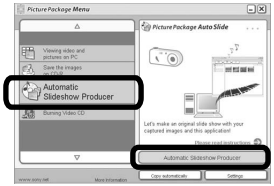
① Click the file you want to preview on the left frame.
② Click [▶] to preview the file.

6 Click [Next] and enter the disk name.

When you insert a CD-R in the CD-R drive and click [Write], the screen used for writing to a disc appears.

Creating a slide show

Click [Automatic Slideshow Producer] on the left side of the screen, then click [Automatic Slideshow Producer] in the lower-right corner of the screen.



The screen used for creating a slide show appears.

Printing images

1 Perform the procedures described under "Viewing images on a computer" (page 90) to display the list of images.

2 Double-click and select the images you want to print from the list.

3 Click the button on the screen.



The screen used for printing images appears.

4 Click [File] in the upper-left corner of the screen, then select [Print].



The printing wizard screen appears.

5 Set the paper size and the number of sheets and print images.

Copying images to your computer

— For Macintosh users

Recommended computer environment

OS: Mac OS 9.1, 9.2, or Mac OS X (v10.0/v10.1/v10.2/v10.3)

The above OS must be installed at the factory.

USB connector: Provided as standard

- If you connect two or more USB equipment to a single computer at the same time, some equipment, including your camera, may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a USB hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

USB mode

There are two modes for a USB connection when connecting with a computer, [Normal] and [PTP]* modes. The default setting is the [Normal] mode. This section describes the [Normal] mode as an example.

* For a details on the PTP connection, see page 114.

Communication with your computer

When your computer resumes from the suspend or sleep mode, communication between your camera and your computer may not recover at the same time.

When a USB connector is not provided on your computer

When neither a USB connector nor a “Memory Stick” slot is provided, you can copy images using an additional device. See the Sony Website for details.
http://www.sony.net/

1 Connecting your camera to your computer

For details, see page 82.

Disconnecting the USB cable, removing the "Memory Stick Duo" from your camera or turning off the power during USB connection

Drag and drop the drive icon or the icon of the "Memory Stick" to the "Trash" icon, then disconnect the USB cable, remove the "Memory Stick Duo", or turn off the camera.

- If you are using Mac OS X v10.0, disconnect the USB cable etc., after you have turned your computer off.

2 Copying images

1. Double-click the newly recognized icon on the desktop.
   The contents of the "Memory Stick Duo" inserted in your camera appear.
2. Double-click [DCIM].
3. Double-click the folder that the images you want to copy are stored.
4. Drag and drop the image files to the hard disk icon.

- The image files are copied to your hard disk. For details on the storage location of the images and file names, see page 85.

3 Viewing the images on your computer

1. Double-click the hard disk icon.
2. Double-click the desired image file in the folder containing the copied files.
   The image file opens.

- "Picture Package" cannot be used with Macintosh.

Using "ImageMixer VCD2"

"ImageMixer VCD2" is also compatible with Macintosh (Mac OS X (v10.1.5)). Using "ImageMixer VCD2" on the CD-ROM supplied with your camera, you can create a video CD using the image or movie materials that are stored in your computer.

- "ImageMixer VCD2" for Macintosh can create only the disk image to store the image file on a CD-R in the video CD format. Toast by Roxio (not supplied) is required to create a video CD.
- When the computer is in use, shut down all other application software before you install "ImageMixer VCD2."

Technical support of "ImageMixer VCD2" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Required computer environment

OS: Mac OS X (v10.1.5 or later)
The above OS must be installed at the factory.
CPU: iMac, eMac, iBook, PowerBook, Power Mac G3/G4 series
Memory: 128 MB or more (256 MB or more is recommended.)
Hard Disk: Disk space required for installation: approximately 250 MB
Display: 1024 × 768 dots or more, 32,000 colors or more

- QuickTime 4 or later must be pre-installed. (QuickTime 5 is recommended.)
- Operations are not guaranteed for all the recommended computer environments mentioned above.

1 Installing "ImageMixer VCD2"

1. Turn on your computer.
   - The display settings should be 1024 × 768 dots or higher and 32,000 colors or higher.
2. Insert the CD-ROM (supplied) into the CD-ROM drive.
3. Double-click the CD-ROM icon.
4. Copy the [IMXINST.SIT] file in the [MAC] folder to the hard disk icon.
5. Double-click the [IMXINST.SIT] file in the copy-to folder.
6. Double-click the [ImageMixer VCD2_ Install] extracted file.
7. After the user information screen appears, enter the desired name and password.
   The installation of the software starts.

2 Creating a video CD with a menu

"ImageMixer VCD2" is compatible with High resolution still image video CD.

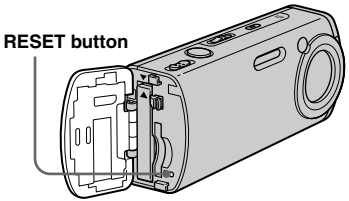
1. Open the [ImageMixer] folder in [Application].
2. Click [ImageMixer VCD2].
3. Carry out steps 2 to 5 on page 90.
4. Click [Next] and enter the disk name and its destination.
   The preperation for storing the file on a CD-R is completed.

Troubleshooting

If you experience trouble with your camera, try the following solutions.

1 First check the items on the tables below. **If code displays "C:□□:□□" appear on the screen, the self-diagnosis display function is working (page 107).**

2 Should your camera still not work properly, press the RESET button inside the battery/"Memory Stick Duo" cover using a fine-tipped object, then turn on the power again. (All the settings including date and time are cleared and reset to the factory settings.)



3 Should your camera still not work properly, consult your Sony dealer or local authorized Sony service facility.

Battery pack and power

Symptom	Cause/Solution
You cannot charge the battery pack.	• The camera is turned on. Turn the camera off (page 17).
The battery pack cannot be installed.	• Install the battery pack while pushing the battery eject lever toward the front of the camera using the tip of the battery pack (page 13). • Install the battery pack correctly (page 13).
The ϟ/CHG lamp flashes when charging a battery pack.	• Install the battery pack correctly (page 13). • The battery pack has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • The battery pack is discharged. Re-insert the AC Adaptor and then charge the battery pack.

Symptom	Cause/Solution
The ϟ/CHG lamp does not light up when charging a battery pack.	• The AC Adaptor is disconnected. Properly connect the AC Adaptor (page 16). • The AC Adaptor has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • Install the battery pack correctly (page 13). • The battery pack is completely charged. • The battery pack is discharged. Re-insert the AC Adaptor and then charge the battery pack.
The battery remaining indicator is incorrect, or sufficient battery remaining indicator is displayed but the power runs out soon.	• You have used the camera in an extremely hot or an extremely cold location (page 115). • A deviation has occurred in the remaining battery time. Fully discharge and then charge the battery pack so that the battery remaining indicator functions correctly (page 14). • The battery pack is discharged. Install a charged battery pack (page 13). • The battery pack is dead (page 119). Replace the battery pack with a new one.
The battery pack runs down too quickly.	• The battery pack is dead (page 119). Replace the battery pack with a new one. • You have used the camera in an extremely cold location (page 115). • The battery terminal is dirty. Clean the battery terminal with a cotton swab, etc., and charge the battery pack. • After charging the battery pack, disconnect the DC plug from your camera.
You cannot turn on the camera.	• Install the battery pack correctly (page 13). • The AC Adaptor is disconnected. Properly connect the AC Adaptor (page 16). • The AC Adaptor has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • The battery pack is discharged. Install a charged battery pack (page 13). • The battery pack is dead (page 119). Replace the battery pack with a new one.
The power turns off suddenly.	• If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery pack. Turn on the camera again (page 17) or use the AC Adaptor (page 16). • The battery pack is discharged. Install a charged battery pack (page 13).

Shooting still images/movies

Symptom	Cause/Solution
The LCD screen is not turned on even when the power is turned on.	• The LCD backlight is turned off with [▭] in the dark place. Turn on the LCD backlight with [▭] (page 29).
The subject is not visible on the LCD screen.	• Set the mode switch to 📷 or 🎞 (pages 27 and 75).
The image is out of focus.	• The subject is too close. Position the camera further away from the minimum shooting distance (approx. 12 cm (4 3/4 inches) at W side/50 cm (19 3/4 inches) at T side), then shoot the image. • When shooting still images, select the other mode than 🌙 (Twilight mode) or 🏔 (Landscape mode) for the Scene Selection function (page 39).
Optical zoom does not work.	• You cannot change the zoom scale when shooting movies.
Precision digital zoom does not function.	• [Digital Zoom] is set to [Smart] or [Off] on the Setup screen. Set [Digital Zoom] to [Precision] (pages 30 and 112). • The mode switch is set to 🎞. Set the mode switch to 📷.
Smart zoom does not function.	• [Digital Zoom] is set to [Precision]or [Off] on the Setup screen. Set [Digital Zoom] to [Smart] (pages 30 and 112). • The image size is set to [4M] or [3:2]. Set image size to other settings except [4M] and [3:2] (pages 22). • The smart zoom cannot be used in Multi Burst mode (pages 30 and 58). • The mode switch is set to 🎞. Set the mode switch to 📷.
The image is too dark.	• You are shooting a subject with a light source behind the subject. Select the metering mode (page 55) or adjust the exposure (pages 52 and 109). • The brightness of the LCD screen is too low. Adjust the brightness of the LCD backlight (page 113). • Turn on the LCD backlight with [▭] (page 29).
The image is too bright.	• You are shooting a spotlighted subject in a dark location such as on a stage. Adjust the exposure (pages 52 and 109). • The brightness of the LCD screen is too bright. Adjust the brightness of the LCD backlight (page 113).
The image is monochrome (black and white).	• Set [PFX] (P. Effect) to the other modes than [B&W] (page 59).
Vertical streaks appear when you are shooting a very bright subject.	• The smear phenomenon is occurring. This phenomenon is not a malfunction.

Symptom	Cause/Solution
Noise appears in the image when you view the LCD screen in a dark place.	• The camera is functioning to increase the visibility of the LCD screen by temporarily brightening the image under conditions of low illumination. There is no effect on the recorded image.
Your camera cannot record images.	• No “Memory Stick Duo” has been inserted. Insert a “Memory Stick Duo” (page 21). • The capacity of the “Memory Stick Duo” is full. Delete unnecessary images saved in the “Memory Stick Duo” (pages 42 and 77) or change the “Memory Stick Duo”. • You are using the “Memory Stick Duo” with the write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position (page 117). • You cannot record images while charging the flash. • Set the mode switch to when shooting still images (page 27). • Set the mode switch to when shooting movies (page 75). • The image size is set to [640(Fine)] when recording movies. Insert a “Memory Stick PRO Duo” (pages 75 and 116) or set the image size to other than [640(Fine)].
Recording takes a long time.	• NR slow shutter function is activated (page 39).
The flash does not work.	• The mode switch is set to other than . Set the mode switch to (page 27). • The flash is set to (No flash). Set the flash to auto (No indicator), (Forced flash) or (Slow synchro) (page 32). • When shooting still images, select the other mode than (Twilight mode) or (Candle mode) for the Scene Selection function (page 39). • When (Landscape mode), (Snow mode) or (Beach mode) is selected for the Scene Selection function, set the flash to (Forced flash) (page 32). • Set [Mode] (REC Mode) to [Normal].
Fuzzy specks appear in images shot using the flash.	• Dust in the air reflected the flash light and appeared in the image. This is not a malfunction.
You cannot shoot continuously.	• The capacity of the “Memory Stick Duo” is full. Delete unnecessary images saved in the “Memory Stick Duo” (pages 42 and 77) or change the “Memory Stick Duo”. • The battery pack is discharged, so you can shoot only one image. Install a charged battery pack (page 13).
The eyes of the subject come out red.	• Set [Red Eye Reduction] on the Setup screen to [On] (pages 33 and 112). • Approach the subject and shoot from within the recommended shooting distance using the flash (page 32). • Increase the indoor brightness and shoot the image.

Symptom	Cause/Solution
The date and time are recorded incorrectly.	• Set the correct date and time (pages 18 and 114).
The F value and shutter speed flash when you press and hold the shutter button halfway down.	• Adjust the correct exposure (page 52).

Viewing images

Symptom	Cause/Solution
Your camera cannot play back images.	• Set the mode switch to ▶ (page 40). • The folder/file name has been changed on your computer (page 87). • Playback of image files that have been modified by a computer or images shot using other cameras on your camera is not guaranteed. • The camera is in USB mode. Cancel USB communication (pages 83 and 93).
The image appears rough right after playback starts.	• The image may appear rough right after playback starts due to the image processing. This condition is not a malfunction.
The image cannot be played back on a computer.	• See page 100.

Deleting/Editing Images

Symptom	Cause/Solution
Your camera cannot delete an image.	• The image is protected. Cancel the protection (page 64). • You are using the "Memory Stick Duo" with the write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position (page 117).
You have deleted an image by mistake.	• Marking 🔑 (protect) will prevent you from deleting images by mistake (page 64). • If you are using the "Memory Stick Duo" with write-protect switch, we recommend that you set the switch to the LOCK position to prevent accidental erasure (page 117).
The resizing function does not work.	• You cannot resize movies and Multi Burst images.
You cannot display a print (DPOF) mark.	• You cannot display print (DPOF) marks on movies.

Symptom	Cause/Solution
You cannot cut a movie.	• The movie is not long enough to cut. • Protected movie cannot be cut. Cancel the protection (page 64). • Still images cannot be cut.

Computers

Symptom	Cause/Solution
You do not know if the OS of your computer is compatible.	• Check “Recommended computer environment” (pages 80 and 92).
You cannot install the USB driver.	• In Windows 2000, log on as Administrator (authorized Administrators) (page 80).
Your computer does not recognize your camera.	• Turn on the camera (page 17). • The battery level is low. Use the AC Adaptor (page 16). • Use the supplied USB cable (pages 82 and 92). • Disconnect the USB cable from both the computer and the camera, and connect it again firmly. Make sure that “USB Mode” is displayed on the LCD screen (page 82). • Set [USB Connect] to [Normal] on the Setup screen (pages 47 and 114). • The USB connectors on your computer are connected to other equipment besides the keyboard, the mouse, and the camera. Disconnect all equipment other than the keybord and the mouse from the USB connectors (page 80). • The camera is not connected directly to your computer. Connect the camera directly to your computer without passing through a USB hub or other device (page 80). • Install the USB driver (page 81). • Your computer does not properly recognize the device because you connected the camera and your computer with the USB cable before you installed the “USB Driver” from the supplied CD-ROM. Delete the erroneously recognized device from your computer (page 84), then install the USB driver (page 81).
You cannot copy images.	• Make a correct USB connection between the camera and your computer (pages 82 and 93). • Follow the designated copy procedure for your OS (pages 83, 84, 89 and 92). • You attempted to shoot using a “Memory Stick Duo” formatted by a computer. Shoot using a “Memory Stick Duo” formatted by your camera.
After making a USB connection, “Picture Package” does not automatically start.	• Start up the “Picture Package Menu” and check [Settings]. • Make a USB connection when the computer is turned on (page 82).

Symptom	Cause/Solution
The image cannot be played back on a computer.	• If you are using the “Picture Package” application software, click on help at the upper-right corner of each screen. • Consult the computer or software manufacturer.
The image and sound are interrupted by noise when you view a movie on a computer.	• You are playing back the movie directly from the “Memory Stick Duo”. Copy the movie to the hard disk of your computer and then play back the movie from the hard disk (pages 83, 84, 89 and 92).
You cannot print an image.	• Check the printer settings.
Images once copied to a computer cannot be viewed on the camera.	• Copied to a wrong folder. Copy them to an available folders, such as “101MSDCF” (page 87). • The folder/file name has been changed on your computer (page 87).

“Memory Stick Duo”

Symptom	Cause/Solution
You cannot insert a “Memory Stick Duo”.	• You are inserting the “Memory Stick Duo” backwards. Insert the “Memory Stick Duo” from the correct side (page 21).
You cannot record on a “Memory Stick Duo”.	• You are using the “Memory Stick Duo” with the write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position (page 117). • The capacity of the “Memory Stick Duo” is full. Delete unnecessary images (pages 42 and 77). • The image size is set to [640(Fine)] when recording movies. Insert a “Memory Stick PRO Duo” (pages 75 and 117) or set the image size to other than [640(Fine)].
You cannot format a “Memory Stick Duo”.	• You are using the “Memory Stick Duo” with the write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position (page 117).
You have formatted a “Memory Stick Duo” by mistake.	• All the data on the “Memory Stick Duo” are deleted by formatting. You cannot restore them. If you are using the “Memory Stick Duo” with write-protect switch, we recommend that you set the switch to the LOCK position to prevent accidental erasure (page 117).

PictBridge compliant printer

Symptom	Cause/Solution
The connection cannot be established.	• Consult with the printer manufacturer whether the printer is compliant with the PictBridge or not. • Check that the printer is turned on and can connect with the camera. • Set [USB Connect] to [PictBridge] on the Setup screen (page 114). • Depending on the circumstances, the connection may not be established. Disconnect and connect the USB cable again. If an error message is indicated on the printer, refer to the operating instructions supplied with the printer.
You cannot print images.	• The camera is not connected to the printer. Check that the camera and the printer are properly connected using the USB cable. • Turn on the printer. For further information, refer to the operating instructions supplied with it. • If you select [Exit] during printing, you may not print again depending on your printer. Disconnect and connect the USB cable again. If you cannot print still, disconnect the USB cable, turn off and on the printer, then connect the USB cable again. • Movies cannot be printed. • Images modified with a computer or images shot using other than this camera may not be able to be printed.
Printing is canceled.	• You disconnected the USB cable before the (Not disconnect USB cable) mark disappears.
You cannot insert the date or print images in the index mode.	• Consult with the printer manufacturer whether the printer provides date function or index print function or not. • The date may not be inserted in the index mode depending on the printer. Consult with the printer manufacturer.
The paper size you want to print on does not appear.	• Check with the printer manufacturer whether the printer supports the paper size you want to print on.
"---- -- --" is printed on the date-inserted part.	• The images that do not have the recording date data cannot be printed with the date inserted. Set [Date] to [Off] and print the image.
You cannot print with the current paper size setting of the printer.	• If the printer paper was changed to paper of a different size after the camera was connected to the printer, disconnect and connect the USB cable again. • The printing setting of the camera differs from the printer setting. Change the paper size setting of the camera (pages 70 and 72) or change the printer setting.

Symptom	Cause/Solution
You cannot perform other operations when printing is stopped.	• The printer is performing the printing stop processing, so wait for this processing to finish. (This processing may take some time depending on the printer.)

Others

Symptom	Cause/Solution
A slight rattling noise is heard from inside your camera when you move the camera.	• Linear mechanisms are used for some of the lens functions of your camera. This is not a malfunction.
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. Use an "InfoLITHIUM" battery pack (page 118). • The battery level is low. (The ⌧ indicator appears.) Charge the battery pack (page 13). • Connect the AC Adaptor securely to the DC IN jack of your camera and to a wall outlet (wall socket) (page 16).
The power is on, but the camera does not work.	• The built-in microcomputer is not working properly. Disconnect, and then, after one minute, reconnect all power sources and turn on the camera. If this does not work, press the RESET button inside the battery/"Memory Stick Duo" cover with a fine-tipped object, then turn the power on again. (This will clear the date and time settings, etc.) (page 95)
You cannot identify an indicator on the screen.	• Check the indicator (pages 121 to 124).
The lens gets fogged.	• Moisture condensation has occurred. Turn off the camera and leave for about an hour at room temperature for the moisture to evaporate before use (page 116).
The camera becomes warm when you use it for the long time.	• This is not a malfunction.
The lens does not move when you turn off the camera.	• The battery pack is discharged. Replace the battery pack with a charged battery pack (page 13) or use the AC Adaptor (page 16).

Warnings and messages

The following messages may appear on the screen.

Message	Meaning/Corrective Action
No Memory Stick	• Insert a “Memory Stick Duo” (page 21).
System error	• Turn the power off and on again (page 17).
Memory Stick error	• The inserted “Memory Stick Duo” cannot be used in your camera (page 116). • The “Memory Stick Duo” is damaged. • The terminal section of the “Memory Stick Duo” is dirty. • Insert the “Memory Stick Duo” correctly (page 21).
Memory Stick type error	• The inserted “Memory Stick Duo” cannot be used in your camera (page 116).
Format error	• Failed to format the “Memory Stick Duo”. Format the “Memory Stick Duo” again (page 44).
Memory Stick locked	• You are using the “Memory Stick Duo” with the write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position (page 117).
No memory space	• The capacity of the “Memory Stick Duo” is insufficient. You cannot record images. Delete unnecessary images (pages 42 and 77).
Read only memory	• Your camera cannot record or delete images to this “Memory Stick Duo”.
No file in this folder	• No images have been recorded in this folder.
Folder error	• A folder with the same first three digits number already exists in the “Memory Stick Duo”. (For example: 123MSDCF and 123ABCDE) Select other folders, or create a new folder.
Cannot create more folders	• The folder whose first three digits of the name is “999” exists in the “Memory Stick Duo”. You cannot create any folders.
Cannot record	• The camera cannot record images in the selected folder. Select a different folder (page 49).
File error	• An error occurred while playing back the image.
File protect	• The image is protected against erasure. Release the protection (page 64).

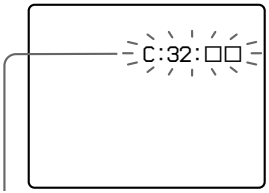
Message	Meaning/Corrective Action
For "InfoLITHIUM" battery only	• The battery pack is not the “InfoLITHIUM” type.
Image size over	• You are playing back an image of a size that cannot be played back on your camera.
Cannot divide	• The movie is not long enough to be divided (about more than two seconds). • The file is not a movie.
Invalid operation	• You are playing back a file that was created on equipment other than this camera.
	• The battery level is low or zero. Charge the battery pack (page 13). Depending on the conditions of use or the type of battery pack, the indicator may flash even though there are still 5 to 10 minutes of remaining battery time left.
	• Camera shake may occur due to insufficient light. Use the flash, mount the camera on a tripod, or otherwise secure the camera in place.
Turn the power off and on again	• A problem with the lens caused an error.
640(Fine) is not available	• 640(Fine) size movies can be recorded only using “Memory Stick PRO Duo”. Insert a “Memory Stick PRO Duo” or set the image size to other than [640(Fine)].
Enable printer to connect	• [USB Connect] is set to [PictBridge], however the camera is connected to a non-PictBridge compliant device. Check the device. • Depending on the circumstances, the connection may not be established. Disconnect and connect the USB cable again. If an error message is indicated on the printer, refer to the operating instructions supplied with the printer.
Connect to device	• You tried to print images before the printer connection was established. Connect to a PictBridge compliant printer.
No printable image	• You tried to execute [DPOF image] without checking the mark. • You tried to execute [All In This Folder] while selecting the folder that stores only movies. You cannot print movies.
Printer busy	• Since the printer is busy, it cannot receive print requests. Check the printer.
Paper error	• A paper error occurred, such as paper-out, paper-jam, etc. Check the printer.
Ink error	• An ink error has occurred in the connected printer, or the ink is low. Check the printer.
Printer error	• The camera received an error from the printer. Check the printer, or check if the image you want to print is corrupted.
	• The data transmission to the printer may not be completed yet. Do not disconnect the USB cable.

Message	Meaning/Corrective Action
Processing	• The printer is performing the printing stop processing. Printing is not possible until this processing is completed. This processing may take some time depending on the printer.

Self-diagnosis display

– If a code starting with an alphabet letter appears

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four numerical digits. If this occurs, check the following code chart and attempt the corresponding corrective actions. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

Code	Cause	Countermeasure
C:32: □□	There is trouble with your camera's hardware.	• Turn the power off and on again (page 17).
C:13: □□	The camera cannot read or write data on the "Memory Stick Duo".	• Re-insert the "Memory Stick Duo" several times.
	An unformatted "Memory Stick Duo" is inserted.	• Format the "Memory Stick Duo" (page 44).
	The inserted "Memory Stick Duo" cannot be used with your camera, or the data is damaged.	• Insert a new "Memory Stick Duo" (page 21).
E:61: □□ E:91: □□	A camera malfunction that you cannot reverse has occurred.	• Press the RESET button inside the battery/"Memory Stick Duo" cover. (page 95)

If you are unable to solve the problem even after trying the corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Number of images that can be saved or shooting time

The number of images that can be saved and the shooting time differ, depending on the capacity of the “Memory Stick Duo”, the image size, and the image quality. Refer to the following charts when you choose a “Memory Stick Duo”.

- The number of images is listed in Fine (Standard) order.
- The values for the number of images that can be saved and the shooting time may vary, depending on the shooting conditions.
- For normal shooting times and numbers of images that can be saved, see page 25.
- When the number of remaining shooting images is greater than 9,999, the “>9999” indicator appears on the LCD screen.
- The table below shows the approximate number of images and recording time that can be recorded on a “Memory Stick Duo” that has been formatted by this camera.

Multi Burst (Units: images)

	16MB	32MB	64MB	128MB	256MB	512MB
1M	24 (46)	50 (93)	101 (187)	202 (376)	357 (649)	726 (1320)

Movie

	16MB	32MB	64MB	128MB	256MB	512MB
640(Fine)	—	—	—	—	0:02:57	0:06:02
640(Standard)	0:00:42	0:01:27	0:02:56	0:05:54	0:10:42	0:21:47
160	0:11:12	0:22:42	0:45:39	1:31:33	2:51:21	5:47:05

The numbers indicate the recording time. For example: “1:34:45” indicates “1 hour, 34 minutes, 45 seconds.”

- The image size is as follows:
  640(Fine): 640×480
  640(Standard): 640×480
  160: 160×112

Menu items

Menu items that can be modified differ depending on the position of the mode switch or the setting.

Menu items are maintained even when the power is turned off or the mode switch is changed to other position (except [PFX] (P.Effect)).

Factory settings are indicated with ■.

When the mode switch is set to 📷

Item	Setting	Description
📷 (Camera)	/ / / / / / / Program / ■Auto	Selects the camera mode (page 27).
(EV)[1]	+2.0EV / +1.7EV / +1.3EV /+1.0EV / +0.7EV / +0.3EV / ■0EV / –0.3EV / –0.7EV / –1.0EV / –1.3EV / –1.7EV / –2.0EV	Adjusts the exposure (page 52).
(Focus)[1][5]	Center AF / ■Multi AF	Chooses the auto focus method (page 50).
WB (White Bal)[1][5]	/ / / / ■Auto	Sets the white balance (page 56).
ISO[1][5]	400 / 200 / 100 / ■Auto	Selects the ISO sensitivity. Select a large number when shooting in dark locations or shooting a subject moving at high speed, or select a small number to obtain high image quality. • Note that the image tends to become noisier as the ISO sensitivity number increases.
(P.Quality)[1]	■Fine / Standard	Records images with fine/standard quality (page 47).
Mode (REC Mode)[5]	Multi Burst Burst ■Normal	– Records a continuous burst of 16 frames within a single still image (page 58). – Records continuously (page 57). – Records an image using the normal recording mode.
(Interval)[3]	1/7.5 / 1/15 / ■1/30	Selects the Multi Burst shutter interval (page 58). (This setting cannot be made when [Mode] (REC Mode) in the menu is set to other than [Multi Burst].)
± (Flash Level)[4]	+ / ■Normal / –	Selects the amount of flash light (page 57).

Item	Setting	Description
PFX (P.Effect)[1]	B&W / Sepia / ■Off	Sets the image special effects (page 59).
(Saturation)[2]	+ / ■Normal / –	Adjusts the saturation of the image. The indicator appears (except when the setting is Normal).
(Contrast)[2]	+ / ■Normal / –	Adjusts the contrast of the image. The indicator appears (except when the setting is Normal).
(Sharpness)[2]	+ / ■Normal / –	Adjusts the sharpness of the image. The indicator appears (except when the setting is Normal).

[1] This does not appear when (Camera) in the menu is set to [Auto].
[2] This does not appear when (Camera) in the menu is set to other than [Program].
[3] This does not appear when (Camera) in the menu is set to [Auto], (Twilight mode), (Twilight portrait mode) or (Candle mode).
[4] This does not appear when (Camera) in the menu is set to [Auto], (Twilight mode) or (Candle mode).
[5] The available settings are limited according to the (Camera) setting in the menu.

When the mode switch is set to

Item	Setting	Description
(EV)	+2.0EV / +1.7EV / +1.3EV /+1.0EV / +0.7EV / +0.3EV / ■0EV / –0.3EV / –0.7EV / –1.0EV / –1.3EV / –1.7EV / –2.0EV	Adjusts the exposure (page 52).
(Focus)	Center AF / ■Multi AF	Chooses the auto focus method (page 50).
WB (White Bal)	/ / / / ■Auto	Sets the white balance (page 56).
PFX (P.Effect)	B&W / Sepia / ■Off	Sets the image special effects (page 59).

When the mode switch is set to ▶

Item	Setting	Description
(Folder)	OK / Cancel	Selects the folder containing the image you want to play back (page 60).
(Protect)	—	Protects and unprotects images against accidental erasure (page 64).
(DPOF)	—	Marks and unmarks the print (DPOF) mark on still images you want to print (page 73).
(Print)	—	Prints images using a PictBridge compliant printer (page 68).
(Slide)	Interval Image Repeat Start Cancel	– Sets the slide show interval (page 62). (Only in single-image mode) ■3 sec / 5 sec / 10 sec / 30 sec / 1 min – Sets the range of the playback images. ■Folder / All – Plays back images repeatedly. ■On / Off – Starts the slide show. – Cancels the slide show.
(Resize)	4M / 3M / 1M / VGA / Cancel	Changes the recorded still image size (page 66). (Only in single-image mode)
(Rotate)	↶ (counter clockwise) / ↷ (clockwise) / OK / Cancel	Rotates the still image (page 62). (Only in single-image mode)
(Divide)	OK / Cancel	Divides a moving image (page 78). (Only in single-image mode)

Setup items

The Setup screen appears when you advance to in the menu and press ▶ again.
Factory settings are indicated with ■.

(Camera 1)

Item	Setting	Description
AF Mode	■Single / Monitor	Selects the focus operation mode (page 51).
Digital Zoom	■Smart / Precision / Off	Selects the digital zoom mode (page 30).
Date/time	Day&Time / Date / ■Off	Selects whether to superimpose the date or time onto the image (page 34). The date and time are not inserted in movie or Multi Burst mode. Also, the date and time appear only during playback, and do not appear during recording.
Red Eye Reduction	On / ■Off	Reduces the red-eye phenomenon when using a flash (page 33).
AF Illuminator	■Auto / Off	Selects whether to emit an AF assist light in the dark. Helps when it is hard to focus on the subject under dark lighting (page 33).
Auto Review	■On / Off	Selects whether to automatically display the recorded image on the LCD screen immediately after shooting a still image. When set to [On], the recorded image is displayed for approximately two seconds. If you press the shutter button halfway down during this period, the recorded image display disappears and you can immediately shoot the next image.

(Camera 2)

Item	Setting	Description
Enlarged Icon	■On / Off	Selects whether to temporarily enlarge the setting indication when you press (Flash mode), (Self-timer) or (Metering mode).

(Memory Stick Tool)

Item	Setting	Description
Format	OK / Cancel	Formats the “Memory Stick Duo”. Note that formatting irrevocably erases all data on a “Memory Stick Duo”, including even protected images (page 44).
Create REC. Folder	OK / Cancel	Creates a folder for recording images (page 48).
Change REC. Folder	OK / Cancel	Changes a folder for recording images (page 49).

(Setup 1)

Item	Setting	Description
LCD Backlight	Bright / ■Normal	Selects the brightness of the LCD backlight. Selecting [Bright] makes the screen bright and easy to see when using the camera outdoors or in other bright locations, but also uses up the battery charge faster. Displayed only when you are using the camera with the battery pack.
Beep	Shutter ■On Off	– Turns on the shutter sound when you press the shutter button. – Turns on the beep/shutter sound when you press the control button/press the shutter button. – Turns off the beep/shutter sound.
Language	—	Displays the menu items, warnings and messages in selected language.

(Setup 2)

Item	Setting	Description
File Number	■Series Reset	– Assigns numbers to files in sequence even if the “Memory Stick Duo” is changed or the recording folder is changed. – Resets the file numbering and starts from 0001 each time the folder is changed. (When the recording folder contains a file, a number one higher than the largest number is assigned.)
USB Connect	PictBridge PTP ■Normal	– Connects the camera with a PictBridge compatible printer (page 69). – When a PTP connection is made, the Copy Wizard automatically starts up and copies the images in the recording folder (page 85) set in the camera to the computer. (This supports Windows XP and Mac OS X.) – Makes a USB connection between the camera and a computer (pages 82 and 92).
Clock Set	OK / Cancel	Sets the date and time (pages 18 and 47).

Precautions

Do not leave the camera in the following places

- In extremely hot place, such as in a car parked in the sun. The camera body may become deformed or this may cause a malfunction.
- Under direct sunlight or near a heater. The camera body may become discolored or deformed, or this may cause a malfunction.
- On rocking vibration
- Near strong magnetic place
- In sandy or dusty places, be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases this malfunction cannot be repaired.

On carrying

Do not sit down in a chair or other place with the camera in the back pocket of your trousers or skirt, as this may cause malfunction or damage the camera.

On cleaning

Cleaning the LCD screen

Wipe the screen surface with an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the lens

Wipe the lens with a soft cloth to remove fingerprints, dust, etc.

Cleaning the DC plug

Clean the DC plug of the AC Adaptor with a dry cotton bud. Do not use the dirty plug. Use of the dirty plug may not properly charge the battery pack.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. Do not use the following as this may damage the finish or the casing.

– Chemical products such as thinner, benzine, alcohol, disposable cloth, insect repellent or insecticide, etc.
– Touch the camera with the above on your hand
– Contact with rubber or vinyl for a long time

On operating temperature

Your camera is designed for use between the temperatures of 0°C and 40°C (32°F and 104°F). Shooting in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. This moisture condensation may cause a malfunction of the camera.

Moisture condensation occurs easily when:

- The camera is brought from a cold location such as a ski slope into a warmly heated room
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation

When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs

Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to shoot with moisture remaining inside the lens, you will be unable to record clear images.

On internal rechargeable button battery

This camera has an internal rechargeable button battery for maintaining the date and time and other settings regardless of whether the power is on or off.
This rechargeable button battery is continually charged as long as you are using the camera. However, if you use the camera for only short periods it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable button battery before using the camera.
However, even if this rechargeable button battery is not charged, you can still use the camera as long as you do not record the date and time.

Charging method

Connect the camera to a wall outlet (wall socket) using the AC Adaptor, or install a charged battery pack, and leave the camera for 24 hours or more with the power off.

- The rechargeable button battery is located inside the internal battery cover. Never remove the rechargeable button battery.

On “Memory Stick”

“Memory Stick” is a compact, portable IC recording medium.
The types of “Memory Stick” that can be used with this camera are listed in the following table. However, proper operation cannot be guaranteed for all “Memory Stick” functions.

“Memory Stick” type	Recording/ Playback[3)]
Memory Stick	–
Memory Stick (MagicGate/ high-speed data transfer)	–
Memory Stick Duo	○
Memory Stick Duo (MagicGate/high-speed data transfer)	○[1)2)]
MagicGate Memory Stick	–
MagicGate Memory Stick Duo	○[1)]
Memory Stick PRO	–
Memory Stick PRO Duo	○[1)2)]

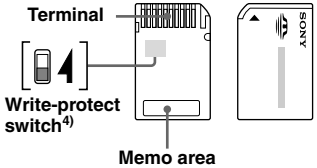
[1)] “MagicGate Memory Stick Duo” and “Memory Stick PRO Duo” are equipped with MagicGate functions. MagicGate is copyright protection technology that uses encryption technology. Data recording/playback that requires MagicGate functions cannot be performed with this camera.

[2] Supports high-speed data transfer using a parallel interface.
[3] 640(Fine) size movies can be recorded and played back only using "Memory Stick PRO Duo."

- "Memory Stick Duo" formatted with a computer is not guaranteed to operate with this camera.
- Data read/write speeds differ depending on the combination of the "Memory Stick Duo" and the equipment used.

Notes on using "Memory Stick Duo" (supplied)

- You cannot record, edit or delete images if you slide the write-protect switch[4] to LOCK with a fine-tipped object.



The position or the shape of the write-protect switch[4] may differ depending on the "Memory Stick Duo" you use.

[4] The "Memory Stick Duo" supplied with this camera does not have a write-protect switch. When using the supplied "Memory Stick Duo," be careful not to edit or delete data by mistake.

- Do not remove the "Memory Stick Duo" while reading or writing data.
- Data may be corrupted in the following cases:
  – When the "Memory Stick Duo" is removed or the camera is turned off during read or write operation
  – When the "Memory Stick Duo" is used in locations subject to static electricity or electrical noise
- We recommend backing up important data.
- Do not press down hard when you write down on the memo area.
- Do not attach a label on the "Memory Stick Duo" itself nor on a Memory Stick Duo Adaptor.
- When you carry or store the "Memory Stick Duo," put it in the case supplied with it.
- Do not touch the terminal of the "Memory Stick Duo" with your hand or a metal object.
- Do not strike, bend or drop the "Memory Stick Duo."
- Do not disassemble or modify the "Memory Stick Duo."
- Do not expose the "Memory Stick Duo" to water.
- Do not leave the "Memory Stick Duo" within the reach of small children. They might accidentally swallow it.
- Do not use or keep the "Memory Stick Duo" under the following conditions:
  – High temperature locations such as the hot interior of a car parked in direct sunlight
  – Locations exposed to direct sunlight
  – Humid locations or locations with corrosive substances

Notes on using a Memory Stick Duo Adaptor (supplied)

- When using a "Memory Stick Duo" with a "Memory Stick" compliant device, be sure to insert the "Memory Stick Duo" into a Memory Stick Duo Adaptor.
  If you insert a "Memory Stick Duo" into a "Memory Stick" compliant device without a Memory Stick Duo Adaptor, you might not be able to remove it from the device.
- When inserting a "Memory Stick Duo" into a Memory Stick Duo Adaptor, make sure the "Memory Stick Duo" is inserted facing in the correct direction, then insert it all the way in. Incorrect insertion may result in a malfunction.
- When using a "Memory Stick Duo" inserted into a Memory Stick Duo Adaptor with a "Memory Stick" compliant device, make sure that the "Memory Stick Duo" is inserted facing the correct direction. Note that improper use may damage the equipment.
- Do not insert a Memory Stick Duo Adaptor into a "Memory Stick" compliant device without a "Memory Stick Duo" attached. Doing so may result in malfunction of the unit.

Note on using "Memory Stick PRO Duo" (not supplied)

"Memory Stick PRO Duo" with a capacity up to 512MB have been confirmed to operate properly with this camera.

On "InfoLITHIUM" battery pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC Adaptor.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F). You may not be able to efficiently charge the battery pack outside of this temperature range.

Effective use of the battery pack

- Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to ensure longer battery pack use:

– Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start shooting.

- Frequently operating the zoom or flash wears out the battery charge faster.
- We recommend having spare battery packs handy for two or three times the expected shooting time, and making trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.
- Do not leave the camera in a hot location such as inside a hot car or exposed to direct sunlight.

Remaining battery time indicator

The power may go off although the battery remaining indicator shows there is enough power to operate. Use the battery pack up and charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if the camera is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used.

How to store the battery pack

- Even if the battery pack will not be used for a long time, fully charge it and use it up once per year. Remove the battery pack from your camera, then store it in a dry, cool place. This is to maintain the battery pack's functions.
- To use the battery pack up on your camera, leave the POWER button to on in slide show playback mode (page 62) until the power goes off.
- Always carry and store the battery pack in the battery case to prevent the battery terminals from becoming dirty or short circuited.

Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and the operating conditions and environment for each battery pack.

Specifications

■ Camera

[System]

Image device
6.85 mm (1/2.7 type) color CCD
Primary color filter

Total pixels number of camera
Approx. 4 231 000 pixels

Effective pixels number of camera
Approx. 4 065 000 pixels

Lens Carl Zeiss Vario-Tessar
3× zoom lens
f = 5.1 – 15.3 mm (32 – 96 mm when converted to a 35 mm still camera)
F2.8 – 5.1
Automatic ND filter switching

Exposure control
Automatic exposure, Scene selection (7 modes)

White balance
Automatic, Daylight, Cloudy, Fluorescent, Incandescent

File format (DCF compliant)
Still images: Exif Ver. 2.2 JPEG compliant, DPOF compatible
Movies: MPEG1 compliant (Monaural)

Recording media
“Memory Stick Duo”

Flash Recommended distance (ISO set to Auto):
0.2 to 2.0 m (7 7/8 to 78 3/4 inches) (W)
0.5 to 1.5 m (19 3/4 to 59 1/8 inches) (T)

[Input and Output connectors]

USB jack mini B

USB communication
Hi-Speed USB (USB 2.0 compliant)

[LCD screen]

LCD panel
3.8 cm (1.5 type) TFT drive

Total number of dots
76 800 (320×240) dots

[Power, general]

Used battery pack
NP-FT1

Power requirements
3.6 V

Power consumption (during shooting)
1.1 W

Operating temperature
0°C to +40°C (+32°F to +104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions
Approx. 95×44.3×25.7 mm (3 3/4×1 3/4×1 1/16 inches) (W/H/D, excluding maximum protrusions)

Mass Approx. 152 g (5.4 oz) (including battery pack NP-FT1, “Memory Stick Duo” and neck strap)

Microphone
Electret condenser microphone

Speaker Dynamic speaker

Exif Print Compatible

PRINT Image Matching II
Compatible

PictBridge
Compatible

■ AC-LS5/LS5B AC Adaptor

Input rating
100 V to 240 V AC, 50/60 Hz, 11 W, 0.16 A to 0.09 A

Output rating
4.2 V DC, 1.5 A

Operating temperature
0°C to +40°C (+32°F to +104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions
Approx. 48×29×81 mm (1 15/16×1 3/16×3 1/4 inches) (W/H/D, excluding projecting parts)

Mass Approx. 130 g (5 oz) excluding power cord (mains lead)

■ NP-FT1 battery pack

Used battery
Lithium-ion battery

Maximum voltage
DC 4.2 V

Nominal voltage
DC 3.6 V

Capacity 2.4 Wh (680 mAh)

■ Accessories

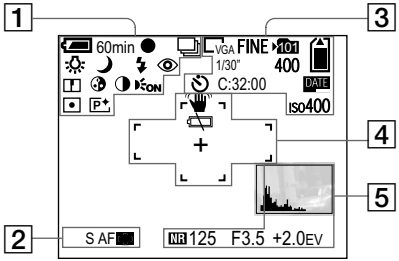
- AC-LS5/LS5B AC Adaptor (1)
- Power cord (mains lead) (1)
- NP-FT1 battery pack (1)
- Battery case (1)
- TAD-LA tripod adaptor (1)
- USB cable (1)
- Neck strap (1)
- “Memory Stick Duo” (16 MB) (1)
- Memory Stick Duo Adaptor (1)
- CD-ROM (USB driver SPVD-012) (1)
- Operating instructions (1)

Design and specifications are subject to change without notice.

The LCD screen

Page numbers in parentheses indicate the location of additional important information.

When shooting still images



1

60min
Battery remaining indicator (14)

AE/AF lock indicator (27, 52)

Recording mode indicator (57, 58)

White balance indicator (56)

Camera mode indicator (27)

Flash mode indicator (32)

Red-eye reduction indicator (33)

Zoom scaling indicator (30)

Sharpness indicator (109)

Saturation indicator (109)

Contrast indicator (109)

AF illuminator indicator (33, 112)

Metering mode indicator (55)

Picture effect indicator (59)

2

S AF / M AF
AF mode indicator (51)

AF range finder frame indicator (50)

3

Image size indicator (22)

FINE/STD
Image quality indicator (47)

Recording folder indicator (48)

Remaining "Memory Stick" capacity indicator

1/30"
Multi Burst interval indicator (58)

400
Remaining number of recordable images indicator (25)

Self-timer indicator (31)

C:32:00
Self-diagnosis display (107)

Date/time indicator (34)

ISO400
ISO number indicator (109)

4

Vibration warning indicator (104)

Low battery warning indicator (104)

AF range finder frame (50)

Spot metering cross hair (55)

5

Histogram indicator (53)

NR slow shutter indicator (39)

125
Shutter speed indicator

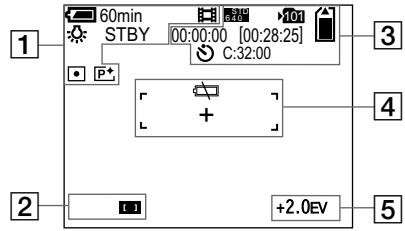
F3.5
Aperture value indicator

+2.0EV
EV level value indicator (52)

Menu/Guide menu (46)

• Pressing MENU switches the menu/guide menu on/off.

When shooting movies



1

60min

Battery remaining indicator (14)

Recording mode indicator (75)

/ / /

White balance indicator (56)

STBY / REC
Movie shooting indicator

×1.3
Zoom scaling indicator (30)

Metering mode indicator (55)

Picture effect indicator (59)

2

/

AF range finder frame indicator (50)

3

/ /

Image size indicator (75)

Recording folder indicator (48)

Remaining "Memory Stick" capacity indicator

00:00:00 [00:28:05]
Recording time [maximum recordable time] indicator (108)

Self-timer indicator (31)

C:32:00
Self-diagnosis display (107)

4

Low battery warning indicator (104)

AF range finder frame (50)

+

Spot metering cross hair (55)

5

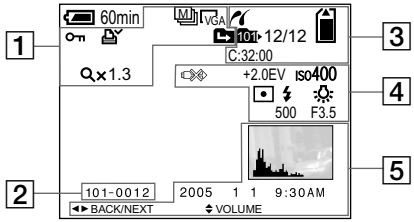
+2.0EV

EV level value indicator (52)

Menu/Guide menu (46)

• Pressing MENU switches the menu/guide menu on/off.

When playing back still images



1

/

Recording mode indicator (58, 57)

/ / / /

Image size indicator (22)

Protect indicator (65)

Print (DPOF) mark indicator (73)

/ /

Change folder indicator (60)

×1.3

Playback zoom scaling indicator (61)

Step 12/16

Frame by frame playback indicator (64)

2

101-0012

Folder-file number (85)

3

PictBridge connecting indicator (69)

Remaining "Memory Stick" capacity indicator

Playback folder indicator (60)

12/12

Image number/Number of images recorded in selected folder

C:32:00

Self-diagnosis display (107)

4

Not disconnect USB cable indicator (70)

+2.0EV

EV level value indicator (52)

ISO400

ISO number indicator (109)

⊡

Metering mode indicator (55)

ϟ / ⊗

Flash indicator

☼ / ☲ / ☁ / ☀

White balance indicator (56)

500

Shutter speed indicator

F3.5

Aperture value indicator

5

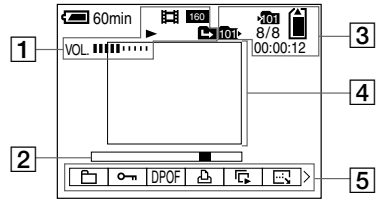
Histogram indicator (53)

Recording date/time of the playback image (34)

Menu/Guide menu (46)

• Pressing MENU switches the menu/guide menu on/off.

When playing back moving images



1

Recording mode indicator (76)

FINE 640 / STD 640 / 160

Image size indicator (76)

► / ■

Playback/stop indicator (76)

↵ / ↳ / ↵↳

Change folder indicator (60)

VOL.

Volume indicator (76)

2

Playback bar (76)

3

101

Recording folder indicator (48)

Remaining "Memory Stick" capacity

101▸

Playback folder indicator (60)

8/8

Image number/Number of images recorded in selected folder indicator

00:00:12

Counter (76)

4

Playback image (76)

5

Menu/Guide menu (46)

• Pressing MENU switches the menu/guide menu on/off.

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